SEMANTIC STRUCTURE AND PERCEPTION OF RELEVANCE IN DISCUSSIONS.

Relu-Shimon Abramovici

PhD.

University of Edinburgh

1977

I, the undersigned, hereby declare that the work reported in this thesis is my own and that I have composed this thesis myself.

Acknowledgments

I am glad to have an opportunity to thank all those who have helped me in the preparation of this thesis.

First, I should like to express my gratitude to my supervisors, Dr. Margaret Donaldson, Dr. Boris Semeonoff, and Dr. Henry Widdowson, all of whom have been most helpful. I have had stimulating discussions with them, they have given me their advice and encouragement, and they have made careful comments on the manuscript. I was particularly lucky since my friends, Professors Hans and Shulamith Kreitler, have taken an interest in this thesis, and they too were so kind as to offer me their advice and to comment on parts of the manuscript. I am grateful for what they have done.

My thanks are due to Dr. A.P.M. Coxon for the time he spent directing me in the use of multidimensional scaling programs, and to Mrs. M. Shotter for discussing with me the experimental design of some of the studies.

I thank also Mrs. J. Panther, Mr. A. Macdonald, Mrs. M. Slade, Mrs. N. Strachan, and the children for creating an environment in which it is pleasant to work.

Last, but not least, I have been supported by a University Studentship, and I am grateful for that help.

Contents

Abstract

This thesis deals with the question how unity of content is achieved or what constraints there are on what can be said next in a discussion. The importance of content and of structure beyond chained pairs of utterances is emphasized. The literature reviewed suggests that this approach differs from other ones in that the other approaches study speech acts, and thus deal with function rather than content, although many of them investigate simple 'chaining'.

Two models and five experimental studies were reported. One pilot study was a replication of Clarke's (1975) experiment. People attempted to put in the right order a set of speaking turns from a conversation. The main observation was that people tended to group utterances belonging to the same subject-matter, which suggests that discourse has structure beyond 'chaining'.

The second study investigated some of the processes involved in achieving cohesion in discourse. Information was obtained about interpretation of discourse, and the operation of planning and anticipation in discourse production.

The next three studies were concerned with continuity of content and its relation to judgments of relevance. It was demonstrated that judged relevance was highest when referents in discourse were related both to the theme and to the previous referent, these judgments declined when one of these relations was implicit or when a referent was related to the theme indirectly, and they were lowest when it was difficult to relate the referents. There was fair agreement between the judgments of the interlocutors and those of independent judges. It was also found that judgment of relevance was affected by continuity of referents, dimensions, and values, but the nature of the effect was specific to each example.

These findings were discussed in terms of the questions raised earlier.

Chapter 1

Background

In this chapter some of the theoretical and empirical work that has influenced the approach adopted in this thesis is surveyed. First, a preliminary statement of the problem and the domain of investigation is presented. This is followed by a section introducing basic concepts and approaches in discourse analysis. In the following sections some of these questions are discussed in greater detail. The selected topics include communication and its relation to social interaction, the differences between some of the approaches in the study of social interaction and discourse analysis, and the different approaches to discourse analysis. The so-called discourse-based approach and the sentence-based approach are discussed.

1.1. Preliminary statement of the problem and the domain investigated

The basic problem that motivated the present project was the question how we combine meanings, given some prior specification of meaning, or what rules we follow when we put meanings together. Such rules, if we can find them, should be of utmost importance for a cognitive psychology. If, following Kreitler and Kreitler (1972 and 1976), we define the cognitive system as the system that processes meanings - and their treatment of the question of meaning will be discussed later - then investigating such rules in language may reveal an important aspect of cognition, assuming that the same rules apply in the "language of thought" (1).

However, the question as it has just been stated is not explicit enough; one would have to specify on what level of language to investigate it, the level of individual words or that of discourse. In the present project, it was decided to study it on the level of discourse (2), and more specifically, in discussions. Discussions were chosen rather than written texts because of the immediacy of response they require from the participants as opposed to writing in which one may write a few drafts before presenting a finished product (3). In a sense, spoken language is more basic than written language and, in fact, interaction through writing is derived from interaction through speech. Most of the studies reported do not deal with plain conversations since it was assumed that their structure is much more difficult to investigate (4). Discussions are treated as a paradigm case here.

We can now reformulate the question in one of the following alternative ways: how are meanings in discussions related, how is unity of content achieved, or what are the semantic constraints operating in discussions that generate unity of content. Intuitively, the concept of 'relevance' seems to reflect the effect of many of these constraints, and for this reason, judgments of relevance were chosen to be the dependent variable in most of the studies reported.

Since the reformulated question is concerned with discourse analysis, we have to consider the work linguists, sociologists, and psychologists have done in this area. Section 1.2 introduces a few basic concepts and approaches.

1.2. Discourse analysis: basic concepts

Widdowson (1973b:69) defines discourse analysis as "the investigation into the way sentences are put to communicative use in the performing of social actions".

In order to make more sense of this definition we shall first consider the place of discourse analysis in linguistics. Chomsky (1965) defines the scope of linguistics as follows: "Linguistic theory is concerned primarily with an ideal speaker - listener, in a completely homogenous speech community, who knows its language perfectly and is unaffected by such grammatically irrelevant conditions as memory limitations, distractions, shifts of attention and interests, and errors (random or characteristic) in applying his knowledge of the language in actual performance. This seems to me to be the position of the founders of modern general linguistics and no cogent reason for modifying it has been offered. To study actual linguistic performance, we must consider the interaction of a variety of factors, of which the underlying competence is only one...." (pp. 3-4). This distinction between competence and performance and the definition of the scope of linguistics have been influential in linguistics and in psycholinguistics (Reber, 1973). However, neither has been unquestioned. Campbell and Wales (1970) have argued that psychologists have to take into account "the ability to produce or understand utterances which are not so much grammatical but more important, appropriate to the context in which they are made" (p. 247) or "communicative competence". Hymes (1971) criticized Chomsky for ignoring socio-cultural factors in his definition of performance, and claimed quite rightly that the term performance is used in an ambiguous way in Chomsky's definition "when one speaks of performance, then, does one mean the behavioural data of speech? or all that underlies speech

beyond the grammatical? or both...." (p. 280). Hymes claims that competence "is dependent on both (tacit) knowledge and (ability for) use." (p. 282). Knowledge and ability for use are related to the questions whether something is formally possible, whether it is feasible, taking into account means of implementation, whether it is appropriate, and whether it is actually done. If we use Hymes' distinction, the term 'performance' can be applied without ambiguity to actual use.

Widdowson (forthcoming) shows that definitions of 'linguistics' allowing for social factors have existed in what Chomsky calls "modern general linguistics", and he also summarizes some of the reasons for dissatisfaction with Chomsky's definition, the essential point being perhaps that the idealization causes misrepresentation of language. He goes on to discuss extensions of the scope of linguistics: "An extension of the scope of linguistics to include non-standardized and contextualized language data, then yields two areas of enquiry: the study of language variation on the one hand and the study of communicative activity on the other.... The analysis of communicative activity however, deals with contextualized language data and takes us beyond the sentence into discourse...." (5). Thus, discourse analysis deals with contextualized data both in the sense of going beyond the sentence and dealing with larger stretches of language and in the sense of taking social factors into account. It can be said to deal with performance or with communicative competence and performance, the latter being the overt behaviour related to it.

Rules of use and rules of usage form a bridge between the system of competence and the system of performance. According to Widdowson (1973a), usage involves exemplification of the grammatical system and use involves employing language for communicative purposes. This is the sense in which 'use' was meant in the definition of discourse given earlier. I shall not deal with discourse analysis in the sense of the study of the variation and change in language, or language usage - accounting for its variability and the codes people use. The latter approach focuses on the code in the use of languages in its social context (6). The approach taken here emphasizes the functioning of language in communication.

We also have to distinguish between the study of discourse and various attempts of linguists to deal with the structure of texts (see Hasan (1968), Van Dijk (1972), Halliday and Hasan (1976)) in terms of anaphora, cataphora,

and lexical cohesion. Widdowson (1973b:68) makes the following comment: "The investigation into the formal properties of a piece of language such as is carried out by Harris, should be called text analysis. Its purpose is to discover how a text exemplifies the operation of the language code beyond the limits of the sentence, text being roughly defined, therefore, as sentences in combination." Thus text belongs to the level of semantics (Halliday and Hasan, 1976) and discourse to pragmatics; (concerning the distinction between semantics and pragmatics, see Bar Hillel, 1970) and in fact, the term 'semantic' is used loosely in the title of the present work. When one analyses a text one looks at its formal structure, at the way grammar and lexicon function so as to achieve cohesion of the sentences, whereas in discourse analysis the units are utterances, which can be put in correspondence with sentences, and one investigates the ways in which they cohere into discourse. The following exchange (from Labov, 1970) is coherent as a piece of discourse, but it lacks cohesion as text:

A: Are you going to work tomorrow?
B: I'm on jury duty.

The question why it is coherent will be discussed in detail later, but basically it is coherent because the hearer can provide a proposition linking both utterances. For example, being on jury duty entails that one does not work, and thus the question was answered. However, this cannot count in an analysis of formal structure (7).

This leads us to some of the specific questions and approaches in discourse analysis. One of the issues that arise is that of choice of point of view from which to analyse discourse. In the case of a dyadic interaction one can adopt the point of view of either participant or that of an external observer. There is no such problem in the analysis of texts since one necessarily adopts an external observer's point of view there. The approach taken in the present studies with regard to this issue was to attempt to investigate to what extent the different points of view converge.

Another issue that arises is that of choice of methodological approach. Widdowson (forthcoming) distinguishes two broad methodological approaches to discourse analysis: one of them starts with linguistic forms and moves toward their communicative function, in other words it deals with the potential of the language system of being realized in discourse. This approach does not normally deal with real data. The second approach deals with real data and it

moves in the opposite direction, namely, from discourse to linguistic form. The work reported here belongs to this category. The problem of point of view probably applies mainly to the second approach since the first does not deal with real data. Widdowson thinks that the second approach involves one also in the question of contextual conditioning, i.e. that a linguistic form may take an unpredictable communicative value as a result of the effects of the linguistic and nonlinguistic context, what Grice (1968) called 'implicatures'. As we shall show later, the ethnomethodologists too have been particularly concerned with this issue as it applies to instances of discourse.

The problem of contextual conditioning is part of the larger issue of rules of production and interpretation in discourse (see Labov 1970, 1972). The specific question here is what are the rules according to which we produce and interpret discourse; it is accepted by many of the people working in this area that language is used in order to perform social acts (Labov 1970, 1972) or speech acts (Searle 1969) and the question is how are the utterances related with the acts they serve to perform. Widdowson (forthcoming) distinguishes between abstract rules people know and procedures they employ in applying these rules in production and interpretation of discourse. He also distinguishes between general interpretive procedures like Grice's (1968) maxims of conversation and specific ones like those of ritual insults as described by Labov (1972) and Dundes et al. (1972).

Summary: In this section we have seen that discourse analysis involves extending the scope of linguistics to deal with unstandardized and contextualized materials; in other words, variations in dialect are not excluded, and sentences are not abstracted from their context. We have distinguished between discourse analysis in the sense of usage of language, or the study of language variation and change and discourse analysis in the sense of the use of language in communication. We are concerned with discourse analysis in the second sense. We also distinguished between discourse analysis and text analysis, both of which go beyond the sentence, but text analysis was defined as dealing with the formal structure of a stretch of language whereas discourse is dealing with communicative use of language. Discourse was said to belong to the domain of pragmatics, and its units were defined as utterances. The following issues in discourse analysis were mentioned: choice of point of view, moving from the sentence to discourse or from discourse to linguistic form, and the issue of rules of production and interpretation in discourse. A few of the issues mentioned in this section will be selected for further discussion in the next

sections.

1.3. Language, communication, and social interaction

In our discussion of the basic concepts in discourse analysis we mentioned that it is concerned with the communicative use of language, or with language in the social context. In this section we shall discuss the concepts of communication and social interaction in greater detail. We shall see that there is no agreed definition of communication, and the discussion will help delimit the domain of the present study.

1.3.1. Definitions of communication

As we have just mentioned, there is no agreed definition for the term communication. Dance (1970) collected ninety-five different definitions, and he found fifteen components in a content analysis of these definitions. The components include symbol/verbal/speech, understanding, interaction/relationship/social process, reduction of uncertainty etc. The definitions probably vary as a function of one's theoretical position. Hartley (1964) attempts to identify five fundamental factors that take different values in different definitions. They rather resemble the scheme of communication in communication theory (see Attneave, 1959) and thus also Jakobson's (1960) and Hymes' (1968) analysis of the functions of language. I will briefly mention them and relate them to the approach taken in the present investigation and probably in discourse analysis in general.

Most definitions of communication include the following five components: (1) an initiator; (2) a recipient; (3) a mode or vehicle; (4) a message; and (5) an effect. Thus, communication will involve a process in which an initiator sends a message, using a mode or a vehicle, to a recipient, and he produces an effect on him. Hartley (1964) also claims that many of the definitions agree that the initiator and recipient can exchange roles. Next we will briefly discuss the five components, for this will help us define the domain of the present investigation.

The initiator and recipient can theoretically be anything from a physical system to living organisms. It is hardly necessary to say that here we are concerned with human beings exclusively. From this it follows almost by definition that the vehicle of communication of interest is language; however,

human beings use nonverbal modes of communication as well (see Argyle, 1972, Birdwhistell, 1972 for example), and even if we emphasize linguistic communication, we should not exclude nonlinguistic aspects. In most of the studies reported an attempt has been made to act in accordance with this rule. The approach taken here concentrates on the meaning conveyed and on the way in which the message is structured from the point of view of what it says. The effects produced by the message are studied from the point of view of the effect on the structure of further messages (8); in the present context the question is whether a message constrains the content of following messages, and how. The fact that initiator and recipient can exchange roles places the question of communication in the context of an ongoing process of interaction.

Mackay (1972) emphasizes that communication is a goal-directed activity. He also suggests that we distinguish between the goal of the sender of the message and its effect on the recipient, and since a signal may be goal-directed or non-goal-directed and in either case it may be perceived as goal-directed or as non-goal-directed, mismatches may occur in some situations. This probably poses a methodological problem for work in discourse analysis, and it is perhaps disturbing that we cannot even estimate the amount of error resulting from such mismatches. It may be a slight exaggeration to claim that "any verbal behaviour is goal-directed" (Jakobson, 1960, p. 351), but much of it probably is, and people tend to give signals when they talk to themselves; for example, the volume of voice will be reduced; moreover, people can ask each other what was said or meant, and if the person has muttered something to himself, he is likely to say that he did not say anything. Thus, it seems to me that there is a certain amount of difficulty here concerning criteria for the decision whether communication occurred in a given situation, but the difficulty is not insuperable.

To summarize, the studies to be reported here and other studies in discourse analysis concentrate on the structure of the message in the context of a situation of communication. The question of choice of units and of structure in this study will be discussed in the context of a detailed discussion of the discourse based approach. Communication normally occurs in the context of a social interaction, and this leads us to a discussion of approaches in the study of communication and interaction.

1.3.2. Communication and interaction

In the previous section the connection between communication and

interaction was introduced. In this section approaches to the study of communication and interaction will be described. First the differences between studies in group dynamics, Bales' (1950) interaction process analysis and other studies in social psychology, the studies reported here, and discourse analysis in general, will be discussed.

1.3.2.1. Group dynamics and discourse analysis

Festinger (1950/1968) defines the issues in group dynamics as follows: "This programme of research concerns itself with finding and explaining the facts concerning informal, spontaneous communication among persons and the consequences of the process of communication. It would seem that a better understanding of the dynamics of such communication would in turn lead to a better understanding of the various kinds of group functioning" (p. 182). Thus, the emphasis is on the functioning of the group, and communication is an important factor in this process but this is not the same as discourse analysis in that it is not the study of the communicative use of language. Festinger is interested, for example, in conditions that generate pressure to communicate, but this is not really a study of language.

The emphasis of this approach on the situation in which communication occurs, to whom one communicates and the reactions of the recipient is reflected in the empirical studies done using this approach. The structure of the message and what it says are hardly studied. If we go through both the 1953 and 1968 editions of Cartwright and Zander's book, we find the following variables as measures of communication: attitude expressed towards another group (Thibaut, 1953), amount, length, and personal references in communication (Schachter, both editions), frequency and duration of communication (Hurwitz, Zander, and Hymovitch, 1953), efficiency of various patterns for transmission of information (Bavelas, both editions), volume of participation, difficulties in communication, and amount of agreement (Deutsch, 1968). Other studies employed notes prepared by the experimenter instead of real communication, for example, Schachter et al. (both editions) and Kelley (1953).

There seems to be no dramatic change in the approach in more recent literature in this area. A few examples of variables investigated from Davis, Laughlin, and Komorita's (1976) review of studies of the social psychology of small group include: cooperation - competition, ability of members of the group, personality variables (dominance in particular), leadership and distribution

of power, productivity of group, and cohesiveness. In studies of bargaining and negotiation communication is normally by means of written offers. For example, effects of concessions of one side have been studied; studies have attempted to determine to what extent concessions from one side lead to an increase in the level of aspirations of the other side, and to what extent they lead to reciprocation.

Some of the recent studies still employ messages prepared by the experimenter (e.g. Marr, 1974), but one can also find examples of studies that look at the messages more closely or at least do not restrict them completely. For example, Bell (1974) sent subjects prefabricated messages in a problem solving situation, but investigated their real responses to these in terms of affective, substantive, and metadiscussional content. She found that the substantive component decreased over time, whereas the affective and metadiscussional increased but that it was the substantive factor that affected both other factors. Reiches and Harral (1974) had subjects negotiate mock court cases. They looked at the predictions of the negotiators and their relation to the outcome. Measurement was done by written estimates given to the investigator, but communication was free.

Another paradigm for social studies is that of games that simulate various social situations. For example, both parties have to show one of two cards, and the particular choice of cards by both leads to a reward to either or both or punishment of either or both. Johnson (1974) wrote a survey of the effects of communication in such studies. He distinguished between studies in which the game is the only means of communication and studies allowing other means as well. Messages enabling expression of intentions, expectations, conditions of retaliation and reconciliation, are more successful in producing cooperative behaviour.

The theoretical position and the studies mentioned highlight the importance of communication in interaction. Discourse analysis, unlike most of these studies, would probably place more emphasis on the structure of the message, its content and the way it is interpreted.

1.3.2.2. Studies of social interaction

There are other studies in social psychology that might seem to belong to the domain of investigation as defined here. There are many studies dealing

with conversations and interviews (for reviews see Argyle and Kendon, 1967, and Argyle, 1969). However, these studies differ from studies in discourse in that their emphasis is on the interaction rather than on the study of language in social interactions, thus these studies too cover complementary aspects to the studies reported here.

A few examples of the issues and studies of conversation will be mentioned. One area that has been investigated is the mechanism of switch of speaker in conversation. The main interest is in the function of nonverbal cues in this process (Kendon, 1967; Meltzer, Morris and Hayes, 1971; Duncan, 1972). Generally, this approach emphasizes the importance of nonverbal cues in the management of the interaction, and there is a considerable amount of work attempting to investigate what happens when these are missing or altered as when the interaction is through a channel such as television or the telephone rather than in a face-to-face situation (for example, Argyle, Lalljee and Cook, 1968; Dicks, 1974; Werner and Latane, 1976; Stephenson, Agling and Rutter, 1976).

Other studies are concerned with various aspects of synchrony and matching in conversation. For example matching of voice-level has been investigated (Natale, 1975), synchrony of gestures and postures (Kendon, 1970) of self-disclosure, namely in volunteering information about oneself (Cozby, 1973), and of other aspects as well. Other studies have been concerned with reinforcement in conversation (Verplanck, 1955; McLeish and Martin, 1975). These studies are mentioned because they represent a behaviourist approach, and we shall show how the studies presented here demonstrate principles that go beyond such an approach, in that discourse has structure beyond chaining of each utterance to the previous one, as such approaches would seem to predict.

To summarize, these studies emphasize the management of the interaction rather than the use of language.

1.3.2.3. Interaction process analysis and discourse analysis

A few words will be said now about Bales' interaction process analysis (1950 and 1968). Bales (1968) defines the method as follows: "Interaction process analysis is an observational method for the study of the social and emotional behaviour of individuals in small groups - their approach to problem solving, their roles and status structure, and changes in these over time." (p. 465). Essentially it is a method for observing interactions in small group. The categories of observation include the following (1950): (A) social-emotional

area - positive: (1) show solidarity; (2) show tension release; (3) agrees; (B and C): task area - neutral: (4) gives suggestions; (5) gives opinion; (6) gives orientation; (7) asks for orientation; (8) asks for opinion; (9) asks for suggestions; (D) social emotional area - negative: (10) disagrees; (11) shows tension; (12) shows antagonism. They are definitely related to the domain of interest of discourse analysis, but, unfortunately, rules of interpretation are not considered.

The method involves close observation of the verbal behaviour as well as of facial expressions and other nonverbal cues, but the emphasis is on action and reaction. In fact the observer has to code roughly something corresponding to every clause, and in doing so he has to take the point of view of the person to whom the message was addressed and take into account what the receiver will think the sender thinks, but there is no interest in the topical content, and the rules of interpretation employed by the receiver and the observer are taken for granted, in a sense. The work to be reported here attempts to focus on these questions, namely, contents of messages and rules of interpretation of discourse.

Another difference between the approach taken by Bales and the present study is in the question of unit of context. Bales instructed his observers not to take into account larger units than the previous utterance whereas in the work here the attempt is made to take into account larger stretches of context.

All this is not meant to be a critique of Bales' instrument, it is just an attempt to indicate differences in approach.

From the discussion of the studies in group dynamics and interaction process analysis it seems that these approaches realize the importance of communication in interaction, but they emphasize aspects other than the use of language and its interpretation by the participants. The work done in discourse analysis complements these approaches.

In the following section we shall discuss approaches in the study of communicative use of language or, discourse analysis proper. We shall discuss both the discourse based approach and the sentence based approach.

1.4. Approaches in discourse analysis

We shall start our discussion of the approaches with the discourse based approach and here we shall first describe the work of ethnomethodologists and ethnographers of communication.

1.4.1. The discourse-based approach

1.4.1.1. The work of ethnomethodologists and ethnographers of communication

Why spend a whole section on ethnomethodology? Giglioli (1972) is probably right when he says "In the last few years, conversational analysis has been deeply influenced by ethnomethodology." (p. 12).

There is close similarity between ethnography and ethnomethodology. I will quote one definition of the term ethnomethodology and briefly mention some points on which ethnomethodology and ethnography agree and points on which they differ. Cicourel (1974) defines ethnomethodology as follows: "The term ethnomethodology was coined by Harold Garfinkel (1967) to index the study of everyday practical reasoning as constitutive of all human activities. A basic consideration in the study of practical reasoning is members' use of everyday talk or accounts to describe the factual status of their experiences and activities." (p. 1563). Ethnomethodologists are interested in conversations presumably as part of the 'everyday talk' that Cicourel mentions. Gumperz and Hymes (1972) in their introduction to Garfinkel (1972) claim that both ethnography and ethnomethodology share the emphasis on the need for explicating the knowledge and unstated assumptions that determine how members of a culture interpret their experience. Both stress the importance of research into the nature of basic cognitive processes and are critical of social science measurement that fails to show how the investigator's categories relate to the actor's interpretation. The last point probably follows from the view that meaning is indexical, or situation dependent or that, in fact, participants create it. Gumperz and Hymes think that the ethnomethodologists take a broader and less formal approach to communication than the ethnographers, but for my purposes I regard them as being the same. Frake's (1964) analysis of 'drinking talk' in Subanun provides an example of work on discourse done by an ethnographer.

Rather than add details about the principles of ethnomethodology I will go on and describe a few examples of work done by them in discourse.

First Garfinkel's (1967) straightforward demonstrations of a few of the principles of ethnomethodology will be considered. Next, work on turn taking in conversation will be described, and the related problem of closing conversations will be discussed. Jefferson's (1972) work will be mentioned; like the work on turns, it too deals with an aspect of sequencing in conversation. Then we shall move to work on the interpretation of discourse done by the ethnomethodologists. We shall discuss the work of Sacks (1972b) in great detail because this work seems to me the clearest example of work on interpretation of discourse done by ethnomethodologists. Other work using the same theoretical apparatus will be mentioned too.

Garfinkel (1967) did a few demonstrative studies that are closely linked to the principles of ethnomethodology. In one of these, students were asked to report an actual conversation and to add also what they and their partners understood and thought they were talking about. He made the following observation on these data:

(1) Interlocutors understood that they were talking about things that were often not mentioned or spoken.

(2) Some things were understood on the basis of attending to the temporal series of utterances as a developing conversation rather than as a plain string.

(3) Some things were understood on the basis of 'understanding work' or interpreting events in the conversation as 'pointing to' a state of affairs that the other assumed to hold.

(4) Interpretations took into account the biography of the relation between interlocutors.

(5) They waited for additional things to be said in order to understand something that was said earlier.

(6) Many utterances can be understood only if one knows or assumes something about the biography of the speaker, the situation in which the utterance was made, what went on earlier in the conversation, and the relationship between the interlocutors.

(7) The events they talked about were vague.

Garfinkel (1967) also provides further demonstrations in which students violated some of the mentioned features in their interactions. For example, repeatedly asking people what they meant resulted in anger. Observing things at home from a stranger's point of view, in other words, removing the biographical background, made reports of the situation 'behaviourized'. When

students behaved as boarders in their homes the result tended to be anger on part of the people around. These studies very clearly demonstrate the importance of the situation and of background assumptions and knowledge in the interpretation of discourse.

Other ethnomethodologists have turned their attention to the orderliness of conversation, and 'turn taking' is one of the aspects of this order. Schegloff (1968) investigated the way the pattern of recurring change of speakers (ABAB...., if we designate one speaker as A and the other as B) starts in telephone conversations. In his attempt to account for this orderliness he formulated the 'distribution rule' which says that the answerer to a telephone call speaks first, and if simultaneous speech occurs for a brief period, it will be the caller who stops speaking. The observation that there was an exception to this rule made Schegloff formulate a more general rule, the 'summons-answer', of which the distribution rule is a special case. This summons-answer has two characteristics: (1) it is "nonterminal", i.e. it cannot be the final exchange in a conversation, and the summoner is obliged to talk again at the end of the sequence; (2) it possesses "conditional relevance", i.e. an answer is expected given that a summons occurred. The orderliness of the beginning of the conversation follows from these principles, and the whole conversation is affected by the operation of this rule since it is the summoner who selects the first topic because of the nonterminality of this unit.

Sacks, Schegloff, and Jefferson (1974) formulated rules to account for turn taking in the whole conversation, rather than at the beginning, as Schegloff (1968) did. I will not discuss this work in detail since it is not part of the main interest here; however, I will mention that another way of saying that conversations are organised in turns is to say that one speaker speaks at a time and speaker change recurs. In order to explain this phenomenon it is necessary to postulate a recursive mechanism that includes procedures for selecting the next speaker and procedures for locating the occasion on which speaker change can take place. Sacks et al. think that this mechanism operates utterance by utterance.

These features of conversation are normative, and their violations are located and corrected. Schegloff and Sacks (1973) mention the following observations to support this point: when silence occurs in a conversation people will comment on somebody's silence; simultaneous speech is also noticed. Schegloff and Sacks (1973) raise the following problem: the turn generating

machinery can generate an indefinitely extendable string of turns; how do the conversationalists simultaneously arrive at a point where they can stop talking without getting into the problem of silence discussed earlier? The writers discuss several solutions to this problem. The simplest of them is for one of the interlocutors to say that he is busy or does not want to waste the listener's time. However, a more interesting solution is the case where both reach a point at which they exchange greetings, and these do not require continuation. The writers observe that when a speaker feels that a topic has been exhausted, he gives a signal to this effect by saying 'Well....' or 'O.K.', and the other interlocutor has the choice of introducing a new topic or a closing section that will end in exchange of greetings. Conversation can, of course, be restarted after a closing section. Schegloff and Sacks also notice that people who are together for a long time do not bother to close conversations.

Another aspect of sequencing in conversations has been investigated by Jefferson (1972). She investigated "side sequences", sequences that do not form part of the main ongoing conversation, like correcting an error or asking for clarification. I will mention three interesting observations that she makes:

(1) Given that an error occurred, a second speaker waits till the end of the utterance, and only then corrects the error, perhaps to give the person who made the mistake a chance to correct it. This relates to Garfinkel's (1967) observation that people may wait for further clarification to come.

(2) The beginning of a side sequence is often marked with the words 'by the way' and the return to the ongoing activity may be marked by 'O.K.'.

(3) Given that a "challengeable item" has occurred, the listener may decide not to challenge it because of the problem this will create for him to return the conversation to the ongoing activity. This again relates to Garfinkel's (1967) observation that the things discussed are vague and that people just wait for clarification.

The work that ethnomethodologists have done on the interpretation of discourse gives an additional explanation to the possible vagueness of conversations and why it matters so little. I will present an analysis of these processes according to Sacks (1972b) in a fairly detailed way, since this seems to be the clearest example of this type of work; I shall mention other work based on the same principle, and eventually show how this type of work relates to Garfinkel's (1967) observations.

Sacks (1972b) gives a set of clear principles for analysing comprehension in the context of analysing a child's story. The story is: "The baby cried. The mommy picked it up." Sacks accounts for the coherence of this story by constructing an "apparatus". The apparatus consists of a categorization device, which includes a collection of categories, and rules for applying them in specific instances. It is conceivable that these categories are used by members of society to identify each other when they interact, to construe events they witness, and to interpret descriptions of such events. "Sex" and "family" are examples of such categorization devices. The device "sex" includes two categories: male and female, whereas the device "family" includes many more categories like baby, mommy, daddy etc.

Now we must consider rules for applying these devices. One such rule is the "rule of economy", which says: "a single category from any membership categorization device can be referentially adequate." (p. 333). Thus, for example, if we identify somebody as a father, it will be superfluous to categorize him explicitly as a male. Another rule of application is the "consistency rule" which says that "if some population of persons is being categorized, and if a category from some device's collection has been used to categorize a first member of the population, then the category or other categories of the same collection may be used to categorize further members of the population" (ibid). This rule has the following corollary or hearer's maxim: "If two or more categories are used to categorize two or more members of some population, and those categories can be heard as categories from the same collection: hear them that way" (ibid). Thus, in the story that Sacks analyses the word "baby" can be interpreted as belonging either to the "stage of life" device or to the "family" device. The occurrence of the word mommy suggests the latter interpretation, even though in this case both interpretations are appropriate.

The device "family" just mentioned belongs to a special type of categories Sacks calls "team". One of the properties of such devices is that they are "duplicatively organized"; by that Sacks means that when such a device is applied to a population, one divides, for example, the population into families, and in each category we expect to find a father, a mother etc.; a position in a category may be empty, of course. There is a related hearer's maxim that roughly (9) says that if one is presented with a categorized population and it can be heard as cases of the device's units, the hearer hears it so. This maxim can explain why the "mommy" in the story is understood to be the baby's mommy even though no genitive form appears, as both belong to the "family" device.

Another concept used by Sacks is that of "category bound activity" or activities assumed by members to be done by members of specific categories. This leads to a formulation of another hearer's maxim which says that "if a category bound activity is asserted to have been done by a member of some category where, if that category is ambiguous (i.e., is a member of at least two different devices) but where, at least one of those devices, the asserted activity is category bound to the given category, then hear that at least the category from the device to which it is bound is being asserted to hold." (p. 337). An analogous maxim holds for a person viewing an event. In the story crying is a category bound activity, it is bound to certain categories in the "stage of life" device, which is an ordered device and includes such categories as baby...., adolescent, adult. Crying is bound to the category baby, and this explains why we interpret it as belonging to the stage of life as well as to the family device.

The concept of social norms helps to explain why the listener perceives sequential order in the story. The activity of the baby, "crying", and the activity of the mother soothing it are related through a norm, i.e. a mother should soothe a crying baby, and thus Sacks formulates a viewer's maxim saying that given the categories, activities and the norms relating them a viewer will recognise one action as following from the other, and a listener will interpret them in this way.

Sacks goes into further details in his analysis, for example, he shows that the story has a proper beginning, but the summary given so far will suffice for our purposes. A conceptual scheme similar to the one summarized here was used by Sacks (1972a) to analyse telephone conversations with suicidal people asking for help, and he showed that the search for help proceeds in terms of categories of relations and the expectations and norms for behaviour on the part of people filling different position in the categories. Schegloff (1972) applied some of the same concepts in order to analyse how people formulate locations in conversations, and Speier (1972) suggests that people use the same methods to identify each other, and people analysing conversations use them to identify the interlocutors. He classifies these problems as belonging to the speaker. To the hearer he attributes another aspect of the problem of interpretation which he calls "the hearer transformation problem"; the hearer can potentially become the next speaker, and thus he has to interpret the previous utterance and tie his utterance with it. Speier discusses "tying devices" and thinks that an utterance reflects the interpretation of the previous one.

What are the principles that emerge from the analyses I have described and how can they account for Garfinkel's (1967) observation of vagueness of the events described in conversations? Some of the studies reveal aspects of what the ethnomethodologists would call negotiation of meanings: Jefferson's (1972) work on misapprehensions and their correction and Schegloff's (1972) work about the way people check whether their categorization of the other member is correct through observing his response to the formulation of places probably covers this aspect of the process of interpretation - for example, X's house will be a meaningful formulation only for one who knows X. The work of Sacks (1972, a and b) demonstrates the importance of the 'shared knowledge' of the interlocutors, and the way they employ it in order to interpret events and conversations. In fact, he makes explicit what the interpreter can contribute, and since he can contribute that much, things can be vague (10), as Garfinkel (1967) observed.

The contribution of the ethnomethodologists to the analysis of discourse is interesting, and Widdowson (1973a) finds the approach of Sacks (1972b) more explicit than the approach of a linguist (Dressler, 1970). However, there are a few points on which I disagree with their approach. Ethnomethodologists imply that they are interested in the processes of interpretation of members of society, but their investigation seems to be limited to the products of behaviour of such members, i.e. transcripts, and there are no attempts to check things with members of society. In a sense their work is not all that different from that of a linguist trying to formulate a rule that will account for the well-formedness of a corpus of examples. (11).

For example, the following claim (Speier, 1972) seems to me inconsistent with the professed interest in the question how members of society construe events: "There might appear to be an element of mystery here. The mystery I refer to is: how do we <u>know</u> another <u>hears</u> speech the way we claim he does. Might he not in fact have heard it one way as opposed to another? Is this sort of consideration that I am proposing.... a problem we can handle? The only answer that appears satisfactory is to look to what the speaker's utterance provides as possible determinate ways of being heard and to what the next utterance produces by way of hearing it as containing those possibilities rather than ask psychological questions about the hearer's state of mind while processing the speech he hears...." (p. 410). This quotation reminds me of Skinner (1957) in that Speier wants to exclude reference to internal process involved in comprehension. Mennel (1975) makes the same point about the work

of the ethnomethodologists. Part of the work to be reported here is directed to the problems Speier (1972) wants to exclude.

There is another minor point concerning the analysis done by the ethnomethodologists. The stretches of discourse they analyse are normally short, and in most cases they select examples to demonstrate a point rather than analysing a whole conversation. Moreover, some of the examples are invented, as for example in Schegloff (1972).

One might criticize the ethnomethodologists by invoking a claim of Hendricks' (1967) that since there is a gap between their structural analysis of discourse and the levels of syntax and morphology they have abandoned linguistics rather than extended its scope. However, this assumes that there is a mapping between the level of linguistics and that of discourse and it may be so, but it need not be so necessarily.

The approach of the ethnomethodologists is only one of the discourse based approaches. In the next section we shall discuss additional approaches and problems that these approaches face.

1.4.1.2. Other studies in the discourse-based approach

Any attempt to work in this approach has to face the following related problems:

(1) What are the basic units in which to analyse discourse?
(2) How are these units organized into discourse?
(3) How is discourse produced and interpreted, and what is the function of the units mentioned in (1)?

The problem of "point of view" mentioned earlier adds a dimension to the complexity of the problems just mentioned, since it entails that we have to examine the views of both interlocutors on each issue as well as those of the analyst, and see whether they converge.

I shall discuss each of the above questions and mention examples of different studies in discourse analysis and their treatment of these issues.

1.4.1.2.1. Selection of basic units in the analysis of discourse

There are two aspects to the question of selection of units for the analysis of discourse: one aspect is the selection of units by the analyst and the second is that of the units in which discourse is understood and produced by the interlocutors, and one would very much want to know how the two aspects are related. I will describe some of the units selected in analyses, but unfortunately, there is little information concerning the units employed by interlocutors in interpretation and production of discourse.

The selection of units by the investigator depends, of course, on the aspect of discourse he wants to study. We have already mentioned work on exchanges in conversation when we discussed the approach of the ethnomethodologists, and the basic unit in such work is a turn of speech. Exchanges are an essential aspect of conversations (Speier, 1972); however, the problem with the turn as a unit is that a turn can consist of a word, a phrase, or indeed of any number of other verbal or nonverbal units (Sacks, Jefferson, and Schegloff, 1974). Some work done by psychologists has employed the unit speaking turn. For example, Schlesinger (1974) used the unit of "move", which corresponds to a speaking turn in most cases. Clarke (1975) and Shapiro (1976) have also used the speaking turn as a basic unit.

The unit of "clause" or its discourse equivalent (as clause is a grammatical unit) has been used only rarely. One example of use of this unit is provided by Labov and Waletzky (1967), who examined the relation between the organization of clauses in narratives and the inferred order of events described. One might think that this work is concerned with text; however, it is in the domain of discourse since the investigators are concerned with the communicative function of the stories.

Units that seem to be more closely related to discourse interpretation include referents (Sacks, 1972; Schegloff, 1972), topics (Clancy, 1972; Landis and Burtt, 1924) (12), idea units (Soskin and John, 1963), and the most popular unit of all, the act. Some studies deal with specific acts, like questioning (Mishler, 1975, a and b) whereas others deal with various kinds of acts (Labov, 1970, 1972; Sinclair and Coulthard, 1975). In most cases the term "act" means speech act (Searle, 1969 and some discussion in next section).

The studies reported here exemplify the following units: turn, clause,

and referents.

Now we can turn to the question of units employed by interlocutors in the interpretation and production of discourse. To my knowledge there are no studies of the units employed by interlocutors. There is, however, some work on units in production of sentences, which I shall briefly mention since it may be instructive in terms of approach to the study of units of production.

One approach in this area is to study pauses in speech, excluding pauses at grammatical boundaries, hoping to learn in this way what unit is planned according to the locations of pauses. Goldman-Eisler (1968) claims to have demonstrated that pauses are related to lexical and semantic choices in production of sentences whereas Boomer (1965) attempted to show that they are related to phonemic clauses. Butterworth (1974) studied segments larger than sentences, attempting to demonstrate that pauses are related to semantic segments. The difficulty with this approach is that the boundaries of many of the units studied probably coincide, and thus it is impossible to exclude any of the units as units of planning, which is what people engaged in this type of work attempt to do.

Slips of the tongue are another type of error that might be informative with respect to units of production. Fodor, Bever, and Garret (1974) summarize the literature in this area and reach the conclusion that "what seems to be happening is that heads of constructions (in effect, major-category content items) are chosen at some level of representation before the integration of the surface form of the utterance." (p. 432). This conclusion is on the level of sentence production, but I should like to suggest that it may be useful to examine errors in the production of discourse in order to learn about the question of units. A minor example of this approach is provided in the studies reported here.

Next we shall consider the question how these units are organized in discourse.

1.4.1.2.2. The organization of discourse

Many of the investigators concentrate on a single aspect of the structure of discourse; this aspect can occur in specific places in conversations, or can be a property of the whole conversation. Other investigators describe a

hierarchical structure that holds across the whole discourse. I shall give a few examples of each.

Schegloff's (1968) study of summons-answers and Jefferson's (1972) study of side sequences mentioned in our section on ethnomethodology are examples of studies concentrating on one aspect of the structure that occurs in specific places. Mishler's (1975, a and b) study of discourse sustained through questions, between children and between adults and children probably belongs in this category too, even though it is conceivable that a whole conversation between an adult and a child should be sustained by questions, and, indeed, Mishler relates this phenomenon to differences in power and authority between adults and children. If the conversation is extended through successive questions by the initial speaker, Mishler calls its structure "chaining". If the initial question is answered by a question the structure is called "arching", and cases in which two answers are given to a question are called "embedding".

Studies concerned with turns and change of speaker exemplify concentration on one aspect of structure that is not specifically localized. We have discussed examples of such work in our discussion of the ethnomethodologists. Speier (1972) whose work was mentioned too, describes the following procedures for tying utterances: question-answer, elliptical utterances, and joint utterances, or utterances started by one person and completed by another. These may account for linking adjacent utterances in discourse, forming a sort of chain. These studies probably account for linear structure in conversations, but there is another aspect to the structure, namely, hierarchical organization.

Hierarchical structure is described, for example, by Sinclair and Coulthard (1975), Labov and Waletzky (1967), Schegloff and Sacks (1973), and Labov (1972). Sinclair and Coulthard (1975) borrowed Halliday's (1961) notion of rank, according to which each unit in the description consists of more units at the lower ranks, and the smallest unit has no structure. They proposed five such units: acts, moves, exchanges, transactions and interaction. In the analysis of doctor-patient discourse, Coulthard and Ashby (1973) found it necessary to add a sixth unit, sequence, between exchange and transaction. Labov and Waletzky (1967) consider only two levels; clause, and four types of sections: orientation sections, complication sections, evaluation and resolution, and sometimes we find coda sections. Schegloff and Sacks (1973) imply the following order: utterances, turns - the turn taking machinery operates on utterances - sequences of utterances of which "exchange" and "adjacency pairs"

such as greeting - greeting are special cases. Conversations consist of opening sections, closing sections and topics. Sacks (1972b) probably implies a very similar structure in the child's story. Labov (1972) thinks that rules of sequencing pertain to acts rather than to utterances, and Labov claims that these can operate at various levels of abstraction; however, his analyses deal with relatively short spans of discourse only.

From the brief summary presented so far it appears that there are linear and hierarchical aspects in the structure of discourse. Very little of the work discussed has been done by psychologists, and one thing that may be useful is to attempt to demonstrate the psychological reality of these structure for language users.

There are some limited examples of this type of work. The work of Clarke (1975) and of Shapiro (1976) has demonstrated linear structuring. Clarke (1975) wanted to demonstrate that sequential rules operate throughout the whole conversation rather than in opening and closing a conversation only. Clarke noticed that anyone who knows a language could reconstitute a sentence given in scrambled order, and this suggested to him a method for demonstrating rules of sequencing in conversation. He selected twenty 'lines' (each of them is a turn in fact) from a conversation, copied them onto cards, and presented the cards in random order to a group of judges and asked them to reconstitute their order. He counted the number of cases in which a card 'n' occurred in the n-th position, the number of cases in which it was followed by card n+1, and the number of cases in which card n+2 occurred in position n+2. His results indicated that subjects performed at better than chance level in reconstituting the passage, and the same results obtained when he instructed the people generating the conversation to omit syntactic clues to sequence (for example, pronouns, sentence conjunctions, etc) so that only semantic clues were left.

This experiment probably demonstrates that people have certain expectations about the structure of conversation, and it may be the case that they conform to the same rules when they generate conversation. However, almost nothing is said by Clarke about the nature of these rules and expectations, except that some of them may be semantic.

A theoretical approach will be necessary in order to gain further understanding of this question and Clarke's approach is atheoretical.

Shapiro (1976) used the method just described to investigate clinical interviews that differed in the level of apparent empathy. Contrary to his expectations, he found that those of high empathy were less structured. He says that it is difficult to know whether this effect is due to a real difference in the conversations or to the fact that visual cues have been omitted, and these may have an important function in highly empathic interviews.

Schlesinger (1974) has proposed an interesting method for describing discussions. The emphasis in his method is on cognitive and informational aspects rather than on social and emotional ones. We have mentioned already that his unit of analysis is the 'move', which roughly corresponds to a turn of speech. He borrowed terms from graph theory in order to describe interrelations among moves. Even though not much empirical data have been presented, the approach is interesting and it is likely to lead to empirical studies. The analyses of the conversations in the present investigation bear some similarity to those of Schlesinger, even though they are not as mathematically sophisticated as his. Another difference is that Schlesinger takes for granted the external observer's point of view, whereas the present studies have investigated this issue.

Next we shall turn to what is perhaps the central problem in discourse analysis, the problem of rules of production and interpretation.

1.4.1.2.3. Rules of production and interpretation of discourse

In our discussion of the work of ethnomethodologists we have mentioned their claim that meanings in discourse are context dependent, that background assumptions and knowledge and the process of negotiation of meanings affect the interpretation of discourse. Here we shall discuss other approaches.

It is my feeling that some of the work that takes the external observer's point of view of discourse investigates rules of production and interpretation only in a very minimal way. For example, Landis and Burtt (1924) listed the topics in overheard conversations and tabulated them according to setting and the sex of the speaker and demonstrated that choice of topic is related to the sex of speaker. Clancy (1972) provides another example; she analysed the progression of topics in a discussion, and attributed the changes to the different interests of the speakers. This is related to discourse production, but only minimally. The same is probably true about the work of Soskin and

John (1963). They developed an elaborate classification of utterances into "expressive statement", "excognitive statement" (thinking aloud), "signones" (statement of speaker's physical or psychological state), "metrones" (evaluations), "regnones" (regulative statements), and "structones" (informational statements). But they do not make it clear that discourse is comprehended in terms of these categories and this may be the reason for the vague conclusions this study reaches. The writers summarize their results as follows: "These results, then, though interesting for diagnostic purposes, particularly in light of the great difficulty in accurately predicting or postdicting specific behaviours with clinical tools.... make only a modest contribution to the understanding of person-environment relations, where the emphasis must necessarily be on process...." (p. 281). And they also make the following comments: "Most of the results are ordered primarily with reference to individual differences and indicate, for example, whether one person is more talkative, labile, or controlling than another. This emphasis on individual differences is somewhat an artifact of the type of analyses carried out in the study...." (ibid). All this does not seem to add much to our understanding.

To turn to approaches that focus on interpretation, it seems to me that there are three interrelated aspects to the investigation of interpretation and production of discourse:

(1) The investigation into how linguistic forms (interrogatives, imperatives, and declaratives) are used to perform acts (requests for information, refusals, challenges, retreats, insults, promises, threats, etc). It is obvious that there is no one-to-one relation between the linguistic forms and the acts performed with them. The question is how they are related. Labov's (1970 and 1972) and Sinclair and Coulthard's (1975) work belong to this category.

(2) The investigation into how listeners will interpret and understand things not explicitly expressed in an utterance in a given context, for example, in the course of a conversation of two persons one of them asks how a mutual friend is getting on in his new job. Suppose he gets the following reply: "Oh, quite well I think; he likes his colleagues, and he hasn't been to prison yet." Why will this reply be interpreted as implicating that the person involved is dishonest? (The example is from Grice (1968)). To my knowledge there is no discourse-based research on this question, but the issue is relevant to the interpretation of discourse. Some of the examples in Labov (1972) may belong to this category, but the main work is that of Grice (1968), and this work is theoretical.

(3) How people interpret the contents in the sense of what is said in discourse and what are the constraints on what can be said in different places in a conversation. Schegloff and Sacks (1973) notice that a "mentionable" cannot be placed just anywhere in a conversation and that one has to wait for an appropriate opportunity. One would like to know some of the constraints operating in this case. This question is part of the larger questions of rules for combining meanings raised in section 1.1., and I hope that the findings to be reported here will shed some light on this problem.

I shall proceed to discuss issues related to each of these aspects in greater detail. The first approach that we mentioned attempts to relate utterances to the acts performed with them.

(a) Work relating words and acts

This approach has probably been influenced by Austin (1962) and Searle's (1969) concept of "speech act". I shall briefly explain this concept mainly as used by Searle (1969) and mention some criticism of his approach because it has been influential in discourse analysis. It should be emphasized, though, that Searle's theory is a theory of competence, and thus it does not apply directly to discourse. Making statements, giving commands, asking question, making promises are examples of speech acts. Searle (1969) sets the conditions for the performance of different speech acts. For example, the following are the conditions for performing a command:

(1) Propositional content: future act (A) of H (hearer).
(2) Preparatory: H is able to do A. S (speaker) believes H is able to do A.
(3) Sincerity: S wants H to do A.
(4) Essential: Counts as an attempt to get H to do A in virtue of the authority of S over H.

More generally, Searle (1965) defines meaning as follows: "In the performance of an illocutionary act the speaker intends to produce a certain effect by means of getting him to recognize his intention to produce that effect and furthermore, if he is using words literally, he intends this recognition to be achieved in virtue of the fact that the rules for using the expression he utters associate the expression with the production of that effect." (p. 46).

This theory has had its share of criticism. For example, Pak (1974) makes the point that in Searle's theory the criteria for synonymy of speech acts are not clear, and also that Searle does not explain how speech acts

interact in discourse, and that the separation of propositional indicator and illocutionary force is impossible. (For further criticism, see also Chomsky (1976) and Stampe (1975)). Most of this criticism seems to me justified, but we shall not discuss Searle any further, since Searle is concerned with abstract rules only (13). We shall go on to discuss approaches to discourse, attempting to relate utterance to acts.

Labov's (1970, 1972) work is an example of the approach attempting to relate what is said to acts performed in discourse. To demonstrate the lack of correspondence between linguistic form and discourse function Labov (1972) shows that a request for information can be made by means of a declarative, interrogative, or an imperative form: thus,

(1) I would like to know your name. (Declarative)
(2) What is your name? (Interrogative)
(3) Tell me your name! (Imperative)

Thus, "The rules that connect what is said to the actions being performed with words are complex: the major task of discourse analysis is to analyse them, and thus show that one sentence follows another in a coherent way" (Labov, 1972; 121). Rules connecting words with actions are rules of interpretation and rules connecting actions with words are rules of production.

I shall present some of Labov's examples in order to demonstrate what kinds of rules one can formulate. The simplest example is perhaps that of elliptical responses (Labov, 1970):

A: Are you going to work tomorrow?
B: Yes.

B's response is interpreted as "Yes, I am going to work tomorrow." The following example, however, requires a different rule:

A: She never helps at home.
B: Yes.

In order to account for this example Labov (1970) distinguishes between A-events - i.e. things that A knows and B does not, and B-events - i.e. things that B knows and A does not, and AB-events, or knowledge shared by both interlocutors. Returning to the example above, the following rule explains it: "If A makes a statement about a B-event it is heard as a request for confirmation" (p. 301). The following example demonstrates the necessity for the listener to provide a link between a pair of utterances:

A: Are you going to work tomorrow?
B: I'm on jury duty.

Labov (1972) accounts for this as follows: "If A makes a request for information Q-S_1, and B makes a statement S_2 in response that cannot be expanded by rules of ellipsis to the form XS_1Y, then S_2 is heard as an assertion that there exists a proposition p known to both A and B: if S_2, then ES_1, where (E) is an existential operator, and from this proposition there is an inferred answer to A's request $(E)S_1$" (p. 122). We shall have more to say about such examples when we discuss the work of Grice (1968). Labov (1972) also discusses examples of the interpretation commands, but the rules he provides for their interpretation show a close resemblance to those Searle (1969) provides, and since Searle's conditions have been described, it is not necessary to present those of Labov.

Labov (1972) applied this scheme of analysis to the situation of ritual insults, a social game of negro children. He shows, for example, that it must be part of the shared knowledge of the participants that the insult is not factually true, and from this it follows that denial of a charge is not an appropriate response in this situation. It should be noticed, though, that Labov restricts his treatment of the question how utterances cohere to pairs of utterances only and the question is how can one extend it to larger stretches of discourse, and whether "chaining" of utterances is the only rule here. I also suspect that this approach, as exemplified by Labov, will find it difficult to deal with discourse not involving a ritualistic situation because the distinctions between different acts are not fine enough. Much of the criticism directed at Searle probably applies to this approach as well.

An approach similar to that of Labov is taken by Sinclair and Coulthard (1975) in their analysis of classroom discourse (14). But they treat longer stretches of discourse than Labov. They invoke the notions of "situation" and "tactics" in order to account for the lack of correspondence between linguistic forms and their discourse interpretation. "Situation" covers relevant environmental factors, social factors, and shared experiences of participants affecting the interpretation of discourse; the different role of teacher and students in a classroom situation is an example of such a factor. "Tactics" covers the effects of acts produced earlier and acts following a given act on the way we interpret it. For example, in a classroom situation, an act of speech of the teacher will be classified as "initiator" if a student is allowed to speak after it, but it will be classified as a "starter" if it is followed by further teacher talk since its function is to direct the students' thought in a way that will make a correct answer more likely. This relates to Garfinkel's observation that people wait for things to become clear in discourse, but it

also indicates how difficult it may be to formulate rules for discourse production, since a speaker may add subsidiary acts before or after performing the speech act he wants to perform. (For a theoretical discussion of the problem of relating sequences of speech acts to utterances see Mohan, 1974).

Sinclair and Coulthard discuss rules for interpreting different linguistic forms according to their function in classroom discourse. For example, they discuss the conditions under which an interrogative will function as a command. These conditions resemble those Labov formulated. In Sinclair and Coulthard's terms these demonstrate the effects of the situation since one has to take into account which activities are possible at the time of the utterance, which are proscribed etc.

To summarize, in this section we discussed examples of approaches relating utterances to acts and mentioned some of the problems they encounter.

Some of the work reported here deals with aspects of the relation between acts and utterances, but generally, this is not the approach taken here.

Next we shall discuss Grice's maxims of conversation and their implications for the interpretation of discourse.

(b) Grice's maxims of conversation

I shall present a brief summary of the conceptual framework developed by Grice (1968) because of its importance in explaining "conversational implicatures", which are an important aspect of rules of interpretation as affected by the context of discourse, and because the concept of relevance, which is central to some of the work done here, is dealt with.

The existence of "implicatures" depends on an exploitation of the conventions for the normal use of language. Thus, in order to understand how "implicatures" are generated, we have to understand straightforward communication, and Grice starts by considering normal communication in conversation.

Grice makes the observation that talk exchanges do not normally consist of disconnected remarks; rather they are cooperative efforts, and each participant recognizes in them a common purpose or mutually accepted direction, even though this direction need not be fixed from the beginning of the

conversation, and it need not be very definite. Some exchanges are excluded as unsuitable at different stages in a conversation, no matter how indefinite its direction is. Grice formalizes this observation in the Cooperative Principle that the participants should observe; this Principle says: "Make your conversational contribution such as is required, at the stage at which it occurs by the accepted purpose or direction of the talk exchange in which you are engaged." (p. 45).

Grice formulates more specific maxims which, if followed, should yield results according to the Cooperative Principle. There are four categories of such maxims, which Grice labels as Quantity, Quality, Relation, and Manner. There are two maxims of Quantity: the first says "Make your contribution as informative as is required (for the current purposes of the exchange)" and the second says "Do not make your contribution more informative than is required" (p. 45). The category of Quality includes a supermaxim which says "Try to make your contribution one that is true" and two specific maxims which say "Do not say what you believe to be false" and "Do not say that for which you lack adequate evidence" (p. 46). In the category of Relation there is a single maxim: "Be relevant". But Grice does raise the problem of the existence of different focuses of relevance and the way they shift in conversation, and how to account for changes of topic. I think that these questions are extremely important, and I hope that the work presented here will shed some light on them. The fourth category of maxims is that of Manner. This category includes one supermaxim which says "Be perspicuous" and specific maxims like "Avoid obscurity of expression", "Avoid ambiguity", "Be brief (avoid unnecessary prolixity)" and "Be orderly" (p. 46).

These maxims are not the only ones. There are also social, moral, and aesthetic maxims, but Grice does not discuss these since they are of lesser importance in so far as the aim of talk is concerned. An example of such a maxim (p. 47) is "Be polite".

We can now define "conversational implicature". Grice gives the following definition (p. 49-50). "A man who, by (in, when) saying (or making as if to say) that p has implicated that q, may be said to have conversationally implicated that q, provided that (1) he is to be presumed to be observing the conversational maxims, or at least the Cooperative Principle (2) the supposition that he is aware that, or thinks that, q is required in order to make his saying or making as if to say p (or doing so in those terms) consistent with his

presumption; and (3) the speaker thinks (and would expect the hearer to think that the speaker thinks) that it is within the competence of the hearer to work out, or grasp intuitively, that the supposition mentioned in (2) is required." Grice provides the following account of the interpretation of B's reply by A in the example presented on page 25: B has violated both the maxim of 'relevance' and that of 'perspicuity', and since there is no reason to assume that he is opting out of the Cooperative Principle, B's irrelevance is only apparent if and only if we suppose him to think that C may be dishonest, and B knows that the listener is able to work out that C is dishonest: therefore, B implicates that C may be dishonest. It should be possible to work out a conversational implicature in this way. However, there is another type of implicatures which Grice calls "conventional implicatures" and they do not follow the principle just mentioned. Grice also distinguishes between the implicatures discussed so far and generalized "conversational implicatures" that are carried by the use of a specific form in an utterance. For example, the use of the sentence "X is meeting a woman this evening" would implicate that the woman is not X's mother, wife, sister, daughter, or platonic friend. But we need not go into further detail for our purposes.

From this account it is clear how in a conversation one can say one thing, mean another, and what one says be interpreted in the right way. Gordon and Lakoff (1971) used Grice's maxims in order to account for the use of a certain sentence form to convey a speech act that is not directly related with it, for example, question to convey a request. To give a simplified example, a question like "Can you take out the garbage?" is ambiguous: it has the interpretation of a question and a request. It will convey a request if the hearer has no reason to assume that the speaker intends to convey a question, the speaker, presumably, exploiting the maxim of quantity. Gordon and Lakoff (1971) attempt to incorporate these rules in sentence grammar and thus their work is related to the approach to the study of discourse starting from the sentence. Cole (1975) claims that Gordon and Lakoff's analysis is true as a diachronic description but not as a synchronic one, but this issue does not concern us here.

It is probably obvious to the reader that the work of Grice has common ground with the work of Labov and that of the ethnomethodologists. One can place these approaches on a continuum in terms of the generality of the rules formulated: Grice's formulation are the most general and those of the ethnomethodologists, as exemplified by Sacks, most detailed, with Labov's

formulation in between these two extremes. One could claim, in fact, that the ethnomethodologists are over-elaborate and pay too much attention to detail. Another difference among these approaches is that Labov and the ethnomethodologists based their rules on observations of instances of real discourse, whereas Grice constructed his examples.

To summarize, in this section we discussed Grice's conversational maxims and their contribution to the interpretation of implicatures. It was stressed that the notion of relevance is central in the present study. In the next section we shall describe some additional aspects of the present approach.

(c) Interpretation and production of contents of discourse

Most of the studies mentioned so far emphasize speech acts, whereas in the present approach emphasis is on contents or what is said in discourse, though not exclusively.

Many of the studies we have mentioned examined the products of conversations and tried to make inferences about the process whereby they are interpreted and produced, and the emphasis seems to be on interpretation. Concerning production of discourse, we have discussed the work on sentence planning in our discussion of the units of discourse. I shall mention a few additional studies that demonstrate the effects of cognitive factors in discourse production.

Linde and Labov (1975) investigated people's descriptions of their flats. They found that the majority of such descriptions are imaginary tours which transform spatial layouts into temporally organized narratives. Linde and Labov describe the discourse rules for such narratives and aspects of their grammar as well. From this it is quite clear that production of discourse involves translation of some cognitive input, in this case probably images, into language. Rules of discourse presumably are such that they enable at least a partial reconstruction of the images from discourse.

The findings of Pease (1972) and Pease and Arnold (1973) and those of Mortensen and Arntson (1974) also suggest the importance of cognitive factors in the production of discourse. Pease gave subjects different numbers of utterances from a conversation and asked them to guess the next utterance. One of the things that he found was that it was necessary to give people information

about the beliefs of the person who generated the conversation in order to get consistent guesses across people. Mortensen and Arntson demonstrated that "predisposition toward verbal behaviour" (attitudes) were related to various aspects of actual behaviour, for example, amount of speech.

But we can probe into these cognitive factors further. There seems to be agreement among people investigating conversations that it is not the case that anything can be said anywhere in a conversation. In fact, there is some empirical evidence that suggests the importance of topical continuity: Argyle (1975) found that people judged replying to what is said by talking of a different topic as most disruptive and Lennard and Bernstein (1960) found that topical continuity was positively correlated with the expressed satisfaction with psychotherapeutic sessions. This entails that each participant is involved both in interpretation and in production of discourse. Each has to interpret and to form a representation of what has gone before in order to be able to select his next message. One would like to know what the constraints operating in this selection are. Some of these constraints may apply to conversations only, and they will be valuable if they increase understanding of discourse production. It is possible that some of the constraints have analogues in the language of thought, and, therefore, they should be of more general interest. It may be the case that the same rules determine the way we go about solving a problem or generating alternatives when we try to decide on a course of action. Most probably much more research will be necessary before we can draw any conclusions concerning constraints in the language of thought, but it is likely that this is where research on discourse production will take us in the long run.

Some information concerning these complex processes can probably be obtained from studying products of conversation, but it may be useful to use other methods as well. This is the approach taken in the studies presented here, and in this way the studies in this thesis differ from the other studies in other approaches. The studies presented here also differ from other approaches in that unlike most studies that focus on the relation between utterance and speech acts the approach to meaning taken here is a broad one, and it derives from the work of Kreitler and Kreitler (1968, 1976). Their method and conceptual scheme are described and a sketch of the studies done in this thesis afterwards.

The experimental method employed by Kreitler and Kreitler consists of

asking the subject to communicate to a hypothetical person the meaning of a word or any other stimulus in a comprehensive way. The subject is told that the other understands all other words and means of expression. The responses given can then be categorized according to the aspect of the referent covered by the communication. This criterion enabled them to categorize the responses of the subjects, and the categories can be referred to as dimensions since each of them is a label for an infinite number of responses all of which have in common a mode of classifying phenomena. Examples of the dimensions of meaning include (1) contextual allocation ("the superordinate concept or system of items or relations to which the referent belongs...."); (2) referent's range of inclusion ("the item or parts which constitute the referent or members of the class which it designates...."); (3) referent's function, purpose, role, etc. Meaning is defined as "a pattern of values along dimensions" where the values are the specific things communicated about the referent.

In the present study the above method for collecting data and analysing them were employed in order to investigate processes of interpretation in discussions; the interlocutors were interviewed about parts of a transcript of their conversation. In the same study an attempt was made to obtain information concerning planning and units of planning of discourse. Other studies involved investigating the effects of different structures of possible continuations of discourse on judgments of relevance, investigating the relationship between the structure of a transcript of a conversation and judgments of relevance, and finally interfering with the production of discourse by asking one of the interlocutors to make her contribution irrelevant and examining judgments of relevance of parts of the discussion. The scheme of analysis of the structure of conversations in terms of their contents employed aspects of the semantic model of Kreitler and Kreitler.

Judgments of relevance were the dependent variable in many of the studies because this variable reflects the effects of constraints on what can be said in which place in discourse. More detailed discussion of the relation between the structure of discourse and relevance, and specific hypotheses concerning this relation will be presented together with the experiments. (See 2.3).

In the present approach the problem of point of view was dealt with in one of the studies by interviewing the interlocutors and asking them questions concerning their own conversation, and in other studies by comparing the judgments of relevance by the interlocutors with each other and with those of

an independent group. All of the conversations dealt with are between pairs of people. For a discussion of conversations and interactions involving more people and the effects of different number of participants see Parsons (1968), Pike, (1975) and Speier (1972).

It is hoped that these studies may increase our knowledge of discourse interpretation and production, the factors affecting judgments of relevance in discussions, and thus, indirectly, perhaps, our knowledge of the constraints in the language of thought that prevent the production of anomalous discourse.

In this section we have discussed different approaches to the questions of selection of units for the analysis of discourse, the structure of discourse, and rules of production and interpretation. We also presented a sketch of the studies to be presented in this thesis.

Even though the influence of the sentence-based approach was only minimal in the present investigation, a brief summary of this approach follows in order to present a balanced view.

1.4.2 The sentence-based approach

The work of linguists on presuppositions and attempts to incorporate "performative verbs" in the deep structure of sentences lead from the study of sentences to the study of discourse. There are also claims that the study of discourse and text will result in a better understanding of sentence grammar. Examples of these approaches follow.

We shall start with work on presuppositions and its relation to discourse. There is no agreement on the definition of the term "presupposition" and about tests for it (see Harder and Kock, 1975). However, there will not be much argument that the sentence "When did Arthur arrive?" presupposes the sentence "Arthur arrived" (15). Thus, the deep structure of the interrogative will roughly be: Q. Arthur arrived at some time. This will explain why the following exchange is coherent:

A: When did Arthur arrive?

B: At ten.

The exchange is coherent because both parts have the common element "Arthur arrived", B's utterance being represented as (Arthur arrived) at ten.

There are presuppositions that attach to specific sentence constituents (see Harder and Kock, 1975). Thus, for example, Kirparsky and Kirparsky (1971) discuss what they call factive and nonfactive predicates, Fillmore (1971) makes a similar distinction concerning verbs of judging, and Karttunun (1971) makes a distinction between implicative and nonimplicative verbs. In the following example the first sentence contains a factive and the second a nonfactive predicate:

(1) It is significant that he has been found guilty.

(2) It is likely that he has been found guilty.

The first sentence carries the presupposition that the person has been found guilty whereas the second does not. This difference in presuppositions of the predicate will explain why the following example of discourse is well formed:
He has been found guilty. That is significant.
But it would become ill formed if we substituted likely for significant.

It is evident that this approach accounts for some aspects of chaining of utterances in discourse only. Widdowson (forthcoming) points out that a presupposition may be neutralized in real discourse. He also points out that this approach cannot account for differences with respect to behaviour in discourse of different forms of the same sentence as for example:

(1) Arthur condescended to mow the lawn yesterday.

(2) It was Arthur who condescended to mow the lawn yesterday.

Halliday (1967-1968) deals with this problem. He treats it as part of "theme" which is part of the textual function of language in his system. The following sentences differ in their presupposition:

(1) What John discovered was the cave.

(2) The one who discovered the cave was John.

The first presupposes that John discovered something whereas the second presupposes that somebody discovered the cave. Presuppositions determine whether a sequence of sentences is cohesive. Thus, in the following example the first sequence is not cohesive whereas the second is:

(1) Nobody else had known where the entrance to the cave was situated. What John discovered was the cave.

(2) Nobody else had known where the entrance to the cave was situated. The one who discovered the cave was John.

From this it appears that Halliday regards transformations as devices for organizing sentences so that they have presuppositions that are appropriate

to the context of their use. Widdowson (1973a) gives detailed examples of the functioning of different presuppositions in this way (16), (17).

The attempts to incorporate 'performative' verbs in deep structure of sentences (Ross, 1970) is another example of the sentence-based approach to discourse. However, these attempts lead to something similar to Halliday's model since this position assumes, unlike Searle (1969), that illocutionary force derives from the proposition as a realization of its "meaning potential".

As another aspect of the sentence-based approach I have mentioned claims that the study of discourse and text may help clarify structure on the level of sentences. Van Dijk (1972) summarizes such claims. Another example is to be found in Groendyle and Stockhof (1975) who claim that the notion of "conversational information" is necessary in order to account for the use of modal verbs in English.

To summarize this section, the sentence-based approach to discourse seems to account for some aspects of "chaining" in discourse. The advantage of these approaches is that they do not create a gap between the level of grammar and the levels of text and discourse, which is not the case in other approaches discussed.

1.5 Summary of Chapter One

We started this chapter by saying that the question of how we combine meanings motivated the present project, and we mentioned the importance of this question for cognitive psychology. However, we found it necessary to add constraints to this definition of the problem, and we decided to study it as it applies in discourse, and more specifically in discussions. This led us to consider the area of discourse analysis.

We defined discourse analysis as the investigation of the communicative use of language, and discussed its place in linguistics. We said that the interest here is in aspects of performance or communicative competence and performance.

This was followed by a discussion of the term communication. The aim of this discussion was to characterize the approach to communication taken here. We saw that communication is related to social interaction and that we are

concerned with language in the social context. We discussed the differences among the approach of discourse analysis and the work done by social psychologists who study group dynamics and social interaction, and the work of Bales. The main difference is that unlike discourse analysis, the studies in group dynamics and interaction process analysis do not study language.

We distinguished two approaches in discourse analysis: one that starts with sentences and moves towards discourse and another that starts with examples of real discourse and attempts to analyse them. Basically it is the second approach that is taken in the present series of studies. Different studies of discourse were presented in a fairly detailed way. It was suggested that there are four basic problems that these approaches have to deal with: the problem of selection of units, the problem of describing structure, the problem of rules of production and interpretation, and the question of selection of point of view, which adds a dimension of complexity to the other questions. We discussed the different approaches in terms of these questions.

Some of the work reported here is concerned with the problem of units of discourse, but most of it deals with production and interpretation of discourse and with the problem of point of view.

There are two differences between many of the approaches to the study of discourse and the approach taken here. Unlike most of the studies that focus on the relation between utterances and speech acts the approach taken here is a broad one, and it derives from the work of Kreitler and Kreitler (1968 and 1976). Another difference is that most approaches study the processes of interpretation and production by examining the products of conversations or transcripts. This method was employed here as well, but additional methods were also used.

Chapter 2

Empirical studies

In this chapter the experimental work is reported. The work is presented in the order in which it was done. Two exploratory studies and three experiments are reported.

2.1. Exploratory study 1: the semantic structure of conversation

2.1.1. Introduction

In section 1.4.1.2.2. Clarke's study (1975) was discussed. It will be remembered that Clarke copied on to cards ten speaking turns from a conversation and asked people to put them in the right order. He argued that people are able to reconstruct a sentence from a scrambled set of words at better than chance level and that this ability reflects their knowledge of the grammar that generated the sentence. In an analogous way people should be able to reconstruct a dialogue at better than chance level from a randomly ordered set of speaking turns, and this ability should reflect their knowledge of the rules of conversational sequencing. As mentioned already, Clarke demonstrated that people perform this task at better than chance level.

The present study was a replication and extension of Clarke's work (1). A few changes were introduced in the procedure, however. One of the changes was that the number of speaking turns studied was roughly four times as large as in Clarke's study. Another difference was that the strategies the subjects used while performing the task were observed, and the subjects were asked a few times while performing the task what they were trying to do. A further difference was that instead of calculating the probabilities as Clarke did, the original conversation, one of the reconstructions, and a random sequence of the same set of speaking turns were used in a sorting task, and the results of analysis of the sorting task data under the different conditions of presentation were compared.

No detailed hypothese concerning the outcomes of the experiment were formulated since it was an exploratory study.

2.1.2. Method

2.1.2.1. Subjects:

(a) A conversation between two male students was recorded.
(b) Five subjects carried out the reconstruction task.
(c) Sixty-nine subjects, most of them students, with roughly equal numbers of males and of females, did the sorting task under one of the three conditions. There were 23 subjects in each group.

2.1.2.2. Procedure:

(a) The two subjects whose conversation was recorded were left alone in a room, and were asked to discuss whatever they chose while they were having a cup of coffee. Their conversation was recorded. A few days later they helped to transcribe the conversation. The first 44 turns of their conversation were copied on to cards and used for the remaining tasks. The identity of the speaker was marked on each card.

(b) In the reconstruction task five subjects were given the pack of 44 shuffled cards. They were told that the deck contained utterances from a conversation and asked to attempt to reconstruct the conversation.

(c) In the sorting task subjects were given the cards and were told that the utterances were or could be re-ordered to make a conversation (according to the experimental condition). They were asked to sort the cards into piles according to the topic or subject matter to which they belonged. They were allowed to make as many piles as they wished. One group (23 Ss) was given the conversation as it occurred, a second group (23 Ss) was given one of the reconstructions (see b), and a third group (23 Ss) was given the deck of cards after it had been shuffled (random presentation). Subjects in the reconstruction and random conditions were discouraged from trying to make a reconstruction of their own.

2.1.3. Results and discussion

First, a transcript of the part of the conversation investigated is presented, then the observations from the reconstruction task are discussed, and finally the results from the sorting task are summarized.

(a) A transcript of the conversation studied is presented below. The turns are numbered in the transcript, and later discussion will refer

to them by these numbers.

The Conversation

1. A: We have had a conversation already this afternoon. Er... what are you reading just now?
2. B: In a way of academic work?
3. A: Oh, no, no.
4. B: Pardon?
5. A: No, just for interest.
6. B: I have.... I have been reading a few social science books.
7. A: Oh, really?
8. B: I have been sort of getting interested in just since we've been doing psychology. I was last year, you know, the.... the course we do is, you know, we do biology with it, and last year I was read quite a bit of biology, but this year since we started psychology, I've really got into the social sciences. I've really lost interest in biology now, especially the biology we are doing this year.
9. A: I find it fascinating this year.
10. B: Biology, yea.
11. A: I love the biochemistry.
12. B: Honestly!
13. A: Yes.
14. B: Oh, I can't stand the subject.
15. A: I hope to end up with it.
16. B: Pardon?
17. A: I hope to end up in it.
18. B: Really?
19. A: Yes, I love the biochemistry.
20. B: What other subjects do you do besides....
21. A: Computer science.
22. B: Computer science? So you do three subjects.
23. A: Well, one and two halves.
24. B: One and two halves. Do you like psychology?
25. A: Psychology is O.K. But I'm only doing it so that I can get a job in a psychology unit as a biochemist.
26. B: What's the relation?
27. A: What's the relation....

28. B: Between psychology and....
29. A: Oh, come on, the brain is a biochemical organ.
30. B: Yes, but....
31. A: Or it can be considered as such. It will be nice to get every sort of personality, er.... every mental state down to biochemical workings.
32. B: Yes, I would have thought, though.... you would have to do physiology, as well.
33. A: Yes, I have done a bit of physiology.
34. B: Could you have done it this year instead of computer science?
35. A: I could have done but I didn't want to. You know, it wouldn't fit in the time table, that's right.
36. B: That's.... that's a pity because actually the physiology this year is quite relevant to that, you know. You know, they deal with the nervous system this year, so that er....
37. A: I did quite a lot of that last year sort of....
38. B: But that's really.... interesting. You know, I was reading that some psychiatrists think that now you can er.... treat mental states, you know, mental disorders, just by the use of drugs.
39. A: Oh, yes. It should be possible.
40. B: So that if er.... if, say, a person has a.... you know, periodic depressions, rather er....
41. A: Manic-depression, manic depression....
42. B: Well, I was thinking more of a person who has depressions very frequently....
43. A: Yea.
44. B: .... will after a time, er.... the depressions can become sort of detached from the actual cause, so that you can become depressed without anything actually causing it. You know....

It is obvious from this transcript that this is a conversation between two students who were only slightly acquainted with each other, and in this part of the conversation they were exploring what topic to discuss.

(b) Next, the observations from the reconstruction task are summarized and interpreted.

The subjects probably found the reconstruction task quite difficult as it took them about an hour to complete the task; two subjects were unable

to fit in all the turns, and occasionally they violated the norms for change of speaker in parts of their reconstructions.

Except for one subject, sooner or later all the subjects sorted out the turns according to topic or subject-matter, frequently also having a pile of fillers, questions, unclassifiable utterances, etc.; tried to find the sequence within each topic and to fit in the fillers; and finally, put the topics together. Incidentially, the subject who did not work in this way - at least not explicitly - left out the highest number of stimuli.

These observations demonstrate that people operate with units larger than pairs of turns, and that discourse has structure beyond 'chaining', as the forty-four turns were sorted into three to five topical units. Clarke has demonstrated 'chaining' but his findings are influenced by his method of analysis, which was geared to reveal 'chaining'.

There was not much point in calculating the probabilities in the present data, as Clarke did in his studies, since, as has already been mentioned, some of the subjects were unable to fit in all the stimuli and thus the reconstructions were not really comparable with each other or with the original conversation on this level. Inspection of the reconstructions suggested that clusters of utterances resembling the original conversation occurred in them. It should be stressed also that all the reconstructions seemed to make sense, and only minor inconsistencies occurred in them. (An example of a reconstruction is presented in Appendix 2 : this is the reconstruction that was actually used in the sorting task).

(c) Now we can turn to the sorting task data. They will tell us whether one of the reconstructions resembled the original conversation better than a random sequence of the same set of turns.

The judgments of the subjects were converted into co-occurrence matrices, each entry in such a matrix representing the number of subjects who put each pair of turns in the same pile. If we assume that the more subjects there are in a cell, the closer the turns belong together, and that they can be represented as nearer in some sense, we can treat the data as measures of proximity and analyse them by means of one of the multidimensional scaling (MDS) programs (Roskam-Lingoes, 1969) and by means of Johnson's hierarchical clustering scheme (HCS), (Johnson, 1967). A summary of these analyses will suffice for our purposes.

One of the principles according to which Johnson's HCS operates is that the program first merges the points (stimuli) with the smallest distance amongst them. Once the points have been merged, we frequently find that there are two estimates for the distance between the cluster and the other points; these estimates correspond to the distances from each of the merged points to the other points. Johnson's program overcomes this difficulty by providing two solutions for each set of data, once using the smaller distances to estimate the distances from the merged points, (the so-called connectedness method), and once using the larger distances (the so-called diameter method). If the discrepancy between these solutions is large, the data are too noisy for the analysis. Thus, one has to check the amount of discrepancy before interpreting the results.

Since it is more economical to compare the clusters selected for interpretation in the different solutions, we shall first consider methods for selecting clusters and methods for comparing them afterwards. Johnson (unpublished paper summarized in Fillenbaum and Rapoport (1971) devised a method for testing the significance of the obtained clusters. One way for selecting clusters for interpretation is to choose significant clusters that include as many of the stimuli as possible. This method was employed in the present study.

Once we have decided on the clusters, we can calculate a measure of the distance between sets of clusters for each of the solutions under each of the conditions of presentation, and also across the different conditions of presentation (see Fillenbaum and Rapoport, 1971). The range of the measure of distance is between 0 and 1, and the lower it is, the more similar the clusters are.

We have proceeded in the manner just described. First, clusters were selected, and the distances between these clusters in the different solutions in each of the conditions of presentation were calculated. These distances are presented in Table 1.

Table 1

Distances between clusterings for connectedness and diameter method for each condition:

Condition	Distance
Original	0.144
Reconstruction	0.150
Random	0.230

From this Table it appears that on the whole the data are not very noisy, but they are relatively noisier in the random presentation condition. However, we can proceed to interpret the clusters. Tables 2, 3 and 4 summarize the clusters from the diameter method for each of the conditions of presentation. The right-column in these Tables includes attempts to interpret the clusters and the middle column the numbers of the turns included in each cluster, each number representing one turn.

Table 2

Clusters for original conversation

Cluster no.	Stimuli included	Label
1	1, 2, 5, 6, 3, 4, 7, 8, 9, 10	Reading
2	11, 12, 13, 14	Biochemistry
3	17, 18, 15, 16, 19	Biochemistry
4	20, 21, 22, 23	Timetable (and computer science)
5	24, 25, 26, 27, 28	Psychology and Biochemistry
6	30, 29, 31, 32	Reductionism
7	33, 34, 35, 36, 37	Physiology (and timetable)
8	38, 39, 43, 40, 41, 42, 44	Depression, etc.

From Table 2 we see that most clusters lend themselves to simple interpretation. The division of clusters 2 and 3 is perhaps artificial; some of the clusters (4 and 7) include what would seem to be a main topic and a secondary one.

Table 3

Clusters for the reconstruction of the conversation

Cluster no.	Stimuli included	Label
1	6, 2, 1, 5, 7, 8	Reading
2	20, 21, 22, 23	Timetable (and computer science)
3	3, 26, 27, 28	Psychology and Biochemistry
4	14, 15, 17, 16, 18, 11, 19, 34, 35	Biochemistry
5	12, 30, 29, 31	Brain as biochemical organ
6	4, 9, 10, 37	Biology
7	24, 25, 32, 33, 36	Biology (also timetable & Psychology)
8	39, 13, 43	?
9	38, 40, 42, 41, 44	Depression

The clusters in Table 3 resemble those of Table 2 both in number and in contents. Note that it was difficult to interpret cluster 8.

Table 4

Clusters for random presentation

Cluster no.	Stimuli included	Label
1	9, 14, 20, 21, 22, 34	Biology, computer science, timetable
2	8, 10, 11, 19, 25, 24, 28, 32, 33, 36	Physiology
3	1, 6, 5, 15, 17, 23, 2, 35, 37	Reading and timetable
4	39, 12, 16, 18, 3, 13, 30, 7, 4, 43	'Yes', 'Really'... etc.
5	26, 27, 29, 31, 38, 41, 40, 42, 44	Biochemistry and Depression

Certain meaningful clusters seem to emerge from the random presentation as well. However, they seem to lump together more things, for example no. 1, and it is interesting to note that under this condition of presentation we find a cluster of questions, fillers, repetitions, etc.

A quantitative comparison of the clusters obtained for the different conditions of presentation can be made by means of the distance measure described earlier. This comparison is presented in Table 5.

Table 5

Distances between clusterings for diameter method under different presentation conditions:

Conditions	Distance
Original and Reconstruction	0.104
Original and Random	0.234
Reconstruction and Random	0.204

From Table 5 we see that the clusterings for the original and the reconstruction resemble each other more closely than the clusters of the original and random or the reconstruction and the random conditions do. It is also interesting to note that the distances between the random condition and the other two conditions are of the same order as the distance for the two solutions for the random condition (Table 1).

Unfortunately, there is no way for testing the significance of the differences among these distance measures. However, the data were also analysed by means of a multidimensional scaling program, and using this method, one can compare the representations obtained for the different conditions by means of coefficients of correlation, since the basic stimuli in them were identical, and one can test the significance of the differences among the correlations. Only parts of the MDS analysis that are necessary for these comparisons are presented here.

The MDS program attempts to find a way for representing the stimuli in space in such a way that the more they belong together the closer they should be in the representation. The program normally gives solutions in different numbers of dimensions, and for each solution a few measures of 'stress' - the deviations or the "badness of fit" involved in the solution - are given. One has to take into account three considerations in deciding which solution to select (Stenson and Knoll, 1969): (1) there are approximate tests of significance for Kruskal's measure of stress for different numbers of stimuli and dimensions, and one would prefer a solution that significantly deviates from chance; (2) one can examine the drop in stress as a function of the number of dimensions, and select a number of dimensions such that adding further dimensions does not produce a marked drop in stress; (3) the solution should make sense. We have proceeded as just described. Kruskal's measures of stress for different numbers of dimensions in the different conditions are presented in Table 6.

Table 6

Kruskal's stress for each MDS solution

	Dimensions				
Condition	5	4	3	2	1
Original	0.37501	0.60481	0.81806	0.12481	0.27201
Reconstruction	0.33872	0.55261	0.10865	0.17923	0.39452
Random	0.48922	0.60364	0.80865	0.12410	0.23532

From this Table it is clear that the stress values are fairly low, and they do not decline sharply after the third dimension; therefore, solutions in three dimensions were selected. Their stress values are significant according to the criteria in Stenson and Knoll (1969).

In order to facilitate the comparison of the representations for the different conditions, the distances of the points from the origin in each representation were calculated; Euclidean distances from the origin are unique up to a multiplication by a constant. The distances obtained for the different conditions of presentation were then correlated, and the correlations are presented in Table 7.

Table 7

Correlations of the distances from the origin for the different conditions:

Conditions	r	p (two-tailed)	z (difference between correlations)
Reconstruction and Original	0.4713	< .05	0.7065 (n.s.)
Random and Original	0.3449	< .05	

From this Table we see that the representation of the reconstruction

resembled that of the original conversation more closely than the representation of the random series did, but the difference between the correlations did not reach significance.

What can we conclude on the basis of the data summarized so far? The observations of the subjects performing the reconstruction task demonstrate, as one would expect, that discourse has structure beyond 'chaining', and it will be remembered that this issue has been raised more than once in the introduction. We have said, for example, that the work of Labov (1972) that analyses discourse in terms of 'acts' (1.4.1.2.3.) and the work in the sentence-based approach (1.4.2.) account for chaining. Our observations confirm that these analyses are insufficient, and that it is important to investigate discourse from the point of view of its content. The results of the sorting task suggest that at least one of the reconstructions resembled the original conversation more closely than a random sequence of the same set of turns, and this probably reflects the expectations and knowledge of the person who did the reconstruction. The fact that the difference between the correlations of the representations for the different conditions was not significant is not surprising if we consider the fact that sorting the random series of turns is, in fact, a step toward the reconstruction of the conversation. Thus, it may be the case that this method cannot reveal clear differences between reconstructions and random sequences.

There are some additional critical remarks that can be made concerning this study. Clarke's method requires the subjects to solve a puzzle, in fact, and it is difficult to know how the performance in such a task is related to real conversational behaviour. It is likely, however, that the method does demonstrate that people have some expectations about the structure of discourse. One will probably have to pay more attention to rules for the interpretation of discourse in order to obtain clearer conclusions.

A further difficulty in this study is that the sorting task data are difficult to interpret. This is the result of the fact that the data were analysed across subjects, and there is no way of knowing how they relate to the performance of individuals (2).

Because of these problems, it was decided not to carry on with this method. However, some of the problems raised by this investigation were

taken up in the following studies.

2.2. Exploratory study 2: achieving cohesion in discussion

2.2.1. Introduction

The results of the first exploratory study demonstrated that conversation has structure beyond 'chaining' of pairs of turns and that this structure involves topical units, or units of content. The second pilot study was addressed to the question of how unity of content is achieved in discourse.

The approach in the present study differed from that of the previous one in several ways. In the present study a discussion, namely, a monothematic conversation, was studied, whereas the conversation in the previous study was undirected. It was hoped that the structure of a discussion would be easier to investigate (see 1.1.). Another difference was that whereas in the previous study the external observer's point of view was taken, in the present study the interlocutors were interviewed about their own discussion so as to get closer to their point of view. A further departure from the previous study was that close attention was paid to the question of the interpretation of discourse. The study investigated a theoretical model that attempted to specify some of the necessary conditions for generating a cohesive product in discourse. In the following discussion the word 'text' is used to refer to the product of discourse. It should be noticed that the words 'discourse' and 'conversation' are ambiguous: they can refer either to a certain behaviour or to the product of this behaviour.

The Proposed Model

Assumptions:

(1) It is assumed that conversational behaviour is rule governed, and the effects of the operation of the rules can be traced in the product, namely, the "text" of the conversation. However, it seems to me that we have to examine both the process and the product.

(2) I stick to Labov's (1972) notions of "intention", "rules of production", "rules of interpretation", and "shared knowledge". Perhaps the whole

scheme is an attempt to make these notions more specific, and to demonstrate some of the semantic constraints operating on them.

(3) I take the formal rules of grammar for granted.

(4) The description depicts conversation as a number of possible "loops"; terminating conversation is an active process which will occur under specified conditions (Schegloff and Sacks, 1973).

Description of the model

The model is represented in the attached diagram. In this section I shall try to explain and summarize the diagram.

We assume that both speakers are together, and ready to interact with each other. Following Labov (1972) we start with an intention (1) to communicate in one of the speakers, A, and by means of rules of production (2) he produces an utterance (3). The utterance may, for example, be an attempt to define or propose a domain of meaning to be clarified or discussed. The other person, B, will try to understand what A's utterance means in the given context (5). A specification of context is necessary because an utterance can mean many things, and the representation of the context restricts the possible interpretations. If the message is not clear for some reason, B may question A (box 6), and a clarification sequence (Jefferson, 1972) will follow (7, 8). Box 7 enumerates some of the clarification devices A can use; these include repetition, paraphrase, restating, exemplifying, generalizing, etc. A clarification sequence can follow any other section, and therefore there are arrows linking it to all the other boxes in the diagram.

I am a little uncertain about the justification of separating box 5 from box 9 in the diagram on the one hand, and not separating box 9 into several boxes on the other hand. Perhaps box 5 represents relatively simple interpretation whereas box 9 represents more complex processing. It is likely also that questions following box 5 will be of the type "You mean that....", whereas questions following box 9 will be of the type "From what you say, can I conclude that....".

According to questions 1, 2, 2a in box 9, the speaker, B, tries to

evaluate how the utterance relates to things he knows in general: where does it lead, to what other meanings is it related, and how does it relate to things said so far, after the conversation had started. B probably tries to look at things from A's point of view, and in doing so he relies on the culture they both share. If the process of evaluation requires more information it will bring about questioning (6). Otherwise it will lead to an evaluation of what A said and everything related to it in B's position (question 3, 4), and an utterance whose nature depends on the results of the judgment process will ensue. In other words, it is suggested that both interlocutors anticipate both positions and keep checking them against each other. Boxes 10 and 11 list some of the possible responses according to the outcome of the evaluation process. The result of this process may be the decision that a match or mismatch or partial match exists between the positions. The list of possible responses includes: agreeing, adding information, exemplifying, generalizing and/or abstracting, rejecting, disagreeing, contradicting, questioning, restricting and/or modifying. Adding information can occur along any of the dimensions of meaning described by Kreitler and Kreitler.

Box 13 represents another grouping of the responses, and it can be used only after the conversation has started. In this box I have listed more specific sequences of responses. I have found it convenient to group the possibilities of adding information, exemplifying, generalizing, and modifying and restricting under the label "elaborate" as there are many situations in which any one of them may occur, and they may be interchangeable.

Any output from the speaker will serve as an input for the other speaker, and the circle will start again. The speakers will bring the interaction to an end when one or more of the following conditions obtain: (1) time has elapsed; (2) the problem has been solved (a way has been found to minimize the mismatch between desired and existing state of affairs); (3) mismatch between the beliefs of both parties has been minimized. The first condition we have mentioned involves an external constraint, whereas the second and third involve constraints of a different nature. It may be the case that the third constraint is a special case of the second, since it can be claimed that the problem was to minimize the discrepancy between the positions.

A Model of Semanti of Conversation

Speaker A

(1) Intention

(2) Rules of production

Speaker B

(3) Utterance

definition of domain of meaning to be investigated (If speaker thinks he is unclear - go to 7)

(4) Rules of int

(5) What does it mean in this context?

if unclear

(6) Question

Speaker A

(7) Clarify:
repeat,
paraphrase,
restate,
exemplify,
generalize,
add information,
etc.

(one or more of these)

if clear

if unclear

if unclear

Speaker B

(8) Question whether clear

if clear

(9) Evaluate: (1) What follows from it? (Where does
(2) How does it relate to other things
its connotative meaning? (Inside
discourse).
(2a) After conversation has started:how
relate to what has been said so fa
terms of categories in following b
agree-disagree; adding information
exemplification; generalization; a
contradiction; restriction; modifi
questioning; rejection; etc).
(3) What do I think (believe) about it
(4) Is there a match or mismatch betwe
1, 2 and 3 and/or 2a and 3?

if clear, if match

(intention ↓ utterance)

(10) One or more of following:
(1) Agree
(2) Add information, related meanings, antecedents and consequences, causes and effects, etc
(3) Exemplify
(4) Generalize and/or abstract
± justification

if more inform- ation is required → (6) Question

Speaker A

if clear, if partial match or mismatch

[intention ↓ utterance]

(11) One or more of following:
(1) Reject (± enter new domain)
(2) Disagree
(3) Contradict
(4) Question
(5) Restrict and/or modify
± justification

(12) Go
(sp e)

(13) Sequencing if evaluation is done in terms of 9/2a
(1) If B agreed, elaborate (add information, exemplify, generalize, modify, etc....) (intention utterance)
(2) If B elaborated - go to 4 (change of speakers)
(3) If B rejected (intention utterance) either stop and enter new domain (go back to (3)) or elaborate-until disagreement stops or go to previous possibilities.
(4) Any of the above in case of contradiction

The theme of the conversation is subject to negotiation between speakers. Changes of topic can occur along any of the dimensions of meaning described by Kreitler and Kreitler. For example, speakers may decide to discuss some topic, move to contextual allocation of the concept, and then move to a discussion of its cohyponyms, and so on.

Next, an exploratory study is described whose aim was to see whether the model described earlier fits the behaviour of people in conversation as perceived by them, and to see in which direction the theoretical and empirical framework should be further developed.

It was hoped that the study would yield information pertaining to the following questions:

(1) How does a conversation start?

(2) Process of interpretation:
  (a) Is there evidence for the existence of two levels of interpretation, a global interpretation of the speech act performed and detailed interpretation of meaning?
  (b) Are the following categories of relations employed in the process: agreement-disagreement, additional information, exemplification, generalisation, contradiction, rejection and/or other ones?
  (c) What are the units in which such a classification is done?
  (d) Are intentions 'perceived' in any sense?
  (e) Is there evidence that interlocutors try to think where each utterance leads and to what it is related? Furthermore, is there evidence that people construct hypotheses about the positions expressed, and modify them when they do not fit the information they receive?

(3) Sequences of responses:
  (a) Is there evidence that in case of perceived disagreement one changes one's own position or attempts to change the other's by rejecting, disagreeing, contradicting, asking for more information (to detect weak points in the argument), supplying more information, modifying the other person's statement and/or other things?
  (b) In case of perceived agreement, do the interlocutors go on to add information, exemplify, or generalize?
  (c) Is there evidence for the existence of the following other types of sequences that might occur according to the model:

(i) Agree, followed by adding information, or by exemplification, or modification, etc.

(ii) Reject, followed by start new topic or by add information, exemplify and so on till disagreement disappears.

(iii) Clarification sequences: requests for clarification followed by clarification in the form of a repetition, paraphrase, an exemplification, etc.

2.2.2. Method

2.2.2.1. Subjects:

Two male students who differed in their attitude towards the Common Market (from now on abbreviated as CM) were selected after a preliminary interview. They were strangers to each other before the experiment. Subjects were paid for participation in this study.

2.2.2.2. Procedure:

The subjects were selected two days before the CM referendum was held in Britain. They came for the first experimental session one day before the referendum. They arrived separately. On arrival each of them was told that he was going to take part in a study concerned with the structure of conversations, that he was going to discuss the issue of Britain and the CM with somebody who had a different opinion. Each of them was given a newspaper article to read supporting his point of view (see Appendix 3).

Afterwards they were introduced and asked to discuss the issue of Britain and the CM for about ten minutes, and to try to reach an agreement as to whether Britain should stay in the CM. Their interaction was recorded on videotape, and transcribed later.

After the discussion each of them was asked individually whether he had planned in advance what he was going to tell the other. They were told that people differ in this respect so as to make both alternatives equally desirable. They were also interviewed individually about three sections, one from the beginning, one from the middle, and one from the end of the transcription; the sections are marked in the transcription (see 2.2.3.). Part of the interviewing was done on the day when the interaction was

recorded and another part a few days later. The relevant passages were divided into units roughly corresponding to clauses in grammar; expressions like "I think" "I feel" were not considered independent units.

Each subject was asked what was the meaning of each of these units, what would he say if he had to interpret it to somebody else so that the other would understand what it meant in the given context. They were also asked what did the speaker want to achieve by making the utterance or what was his intention. These two questions should give us information pertaining to the process of interpretation. There was a third question whose aim was to check the way interrelations among utterances and their sequences are perceived by the subjects. The subjects were asked how the utterance is related to what happened earlier and to what comes next. Notes were taken of their answers to the three questions.

2.2.3. Results and discussion

The transcription of the conversation is an important part of the data. It is presented below. The sections about which subjects were interviewed are marked in it and the units numbered. This is followed by Tables of summaries of their replies to the questions of meaning, intentions, and relations. Finally, the questions raised earlier are evaluated in the light of the evidence presented.

CM Debate

Pete: (1) You're pro-Market, then?

Graeme: (nodding) Uh-huh

P: And why are you pro-Market?

G: (2) Eh.... I don't think it can help the situation of this country economically. (3) The country can't support itself without being part of the Market. It's probably better.

P: (4) I'm against it mainly political I think, because I feel that (5) if we are in the CM (6) we can't implement policies of our own. (7) If we want to go one way.... (8) I'm a socialist (9) and I would like to see socialism. (10) I don't think we can have socialism in this country (11)

if we're in the CM. (12)I think as it is at the moment the CM is pretty ineffective,(13)don't you think?

G: (14)Oh, yes(15)but I mean... er... you being a socialist(16)and having more of (17)Do you think you'd achieve socialism by staying in.... er....(18)by staying out of the community?

P: (19)Well I can't see all the community countries at once becoming socialist countries. (20)One thing if Britain wants to be a socialist country(21)or if er.... Italy wants to become a socialist country....(22)I think they'd have to leave the community(23)because I don't think see other community countries agreeing with their becoming socialist countries.

G: (24)That's inaccurate.... a bit.... In Italy there's a big communist er.... (25)it's quite strong also in France(26)and it's inconceivable that they would have considerable power and(27)especially France(28) if communists managed to gain some power over the government. (29) The actual community itself is maybe ineffective in many ways(30) but I mean it is by my understanding of it(31)it is supposed to be confined to certain areas(32)and where it has developed it has allowed to that

P: Yeah,(33)but it's meant to be conveying politically.... (34)I think it's ineffective at the moment anyway(35)so it doesn't matter. (36) In the future it's going to develop into a democratic.... er.... body - (37)I mean the European parliament's going to be democratic (38)and I think that(39)if it's democratic(40)then it'll be difficult for a national government to implement a policy - in particular tax policies and things - (41)which the international government disagrees with(42)if it was democratic as well.

G: (43)Ummm.... it depends what you mean by democratic.... it depends how things.... in any case. The kind of things it's looking after(44) it is an economic body looking after the prices in the home

countries(45) and this is trying to establish sort of thing a free trade area(46) so that there isn't any unfair advantage towards one or other country.

P: Well, it is. It's unfair against Britain and Italy I'd say. It's all the capital and labour.... there's no reason why it should stay in Britain if you can produce it more efficiently in Germany I mean

G: That's economic forces again but that's their original policy and that's where they're trying to develop regional policy surely?

P: But nearly all the money that goes into the community goes on the common agricultural policy.

G: That's because there isn't the powers of the community isn't effective enough but it could be changed - and what would be gained by coming out of it? For Britain?

P: I don't know. It's a bit difficult actually. I just think that I don't believe in free trade areas. I don't think we should have one which is what most of the antis want. So I don't see our chances of competing with German goods. So I think at the moment Germany just sells all their goods to us and we can't sell any abroad. And so they will....

G: Why's that?

P: Because we're just basically inefficient - I don't know....

G: We probably need to revitalize our industry.... er.... we need to in an economically viable position to do that.... I mean.... er.... to get new equipment.... to er.... equip our industry so it can compete with other countries.... I mean.... that's the way the rest of Europe operates. We've got to compete....

P: Yeah.... but I think.... that the best way to do that is to have certain facts so that we can originally.... our industry can develop gradually because it's developed in the wrong direction. We need basic change in the way, I suppose, industry and resources. I can't see any way of changing the economic situation.... I can't see us doing that.... we can only do that by long term efforts.... make a basic change in this country then we can....

G: Tariff values.... I mean.... what would you plan to.... em.... emmm. If you put tariff values on.... any goods coming from America or Europe or somewhere like that would they not put the same values on our goods and we couldn't sell them abroad.... and we'd be stuck with them and you want to see Britain self-supporting, don't you?

P: Oh, I obviously do but as far we'd have to live in a kind of economy but it would only be temporary. Once we sort out our problems.

G: Oh, I mean to say.... how can Britain survive in the meantime?

P: Oh, I don't know....

G: How much can the state economy going to....

P: Well, we can get.... all we need is agricultural goods.... All we need is a few more primary goods and we can get them from.... through the countries.... A common agricultural policy exploits people so....

G: I don't really understand the Common Agricutural

P: I don't really.... but as far as I can see what happens is that.... tariff values go on goods coming in from the Third World to bring them up to the French prices and what it means is.... em.... people talk about getting.... you shouldn't want cheap food.... as a socialist you shouldn't want cheap food.... what it means is the money we're paying.... while we're paying for expensive food.... it's all going to the Community and not to the Third World countries. (laughs)
We haven't reached an agreement yet

G: Well.... from what I understand about the past, the way it used to be the French prices used to be higher than the European prices that prices on the whole used to be high but things are changing.... er.... and several countries have put up their prices and it isn't quite the same.

P: Well, it's only oil and everything else....

G: Oh, I mean oil.... sugar's gone up

P: Sugar! Oil and sugar

G: Er.... oil.... a whole load of other things have gone up as well. The general food prices have come up to European levels and that's when you think about buying the European farmers have gone to Spain.... because.... that's how it gets it started.... em.... em.... money.... em.... out of the tariffs that are put on and that's when partners agree and that doesn't go up.... it's.... you know.... they get so much of the tariffs of goods coming in.... that's when prices are high.... when prices are high they don't get so.... it doesn't go up. But that's not.... I mean.... something that should be changed.... You can't change something like that by getting in

P: As far as I can see we gain everything by getting out because we

wouldn't be contributing to the Community budget. I think that if we want....

(both speaking together)

G: .... give anything back anyway

P: No they don't give us anything.... I mean they give us a few things to the steel industry and things now.... they've given us small grants now.... but.... during the last two weeks or so....

G: They allow companies.... er.... to operate on a.... er.... they can .... er.... try and make a profit in a wider community.... er.... they can compete against.... er.... kinds.... and that's the way the country operates and you can't just change that by coming out of the community.... I mean you have to sort of have a fundamental change in Britain before you could say come out.... em....

P: (1)No.... I'd say.... I think that coming out is a pre.... a prerequisite(2)for a fundamental change in Britain....(3)so I can't .... I can't see.... a.... a change coming about otherwise....

(laughs)

G: (4)I don't know how that would work.... I mean....

P: Is there any.... I mean,(5)can you see any arguments of the antis (6)that you approve of?

G: (7)Well.... certainly....(8)the community's inefficient....(9)but that can be changed....(10)and certainly there is a certain loss of sovereignty(11)but.... er.... I would say that.... er.... this.... a.... kind of sovereignty(12)doesn't exist anyway....(13)That's... I mean.... that socialist point of view....(14)that's something else... (15)I mean you could say British socialists combined with Italian and.... er.... French socialists could combine to make a bigger change in development....(16)let's not argue about that, I suppose....

P: (17)Sovereignty does exist.... I think sovereignty exists.... well, I reckon....

G: (18)Well.... the kind of sovereignty we're talking about I mean it's economic....(19)and you can't sort of disregard the Arabs now.... (20)we're a member of EFTA....(21)you can't disregard NATO as well....

(22) you can't disregard all the other agreements

P: You can in a way work.... towards.... making them apply differently in your country.... I mean.... you can do things.... certainly things like NATO.... I don't know - I don't think NATO's very good but if we're in the Common Market we're stuck with NATO.... em..... you've got to have agreements but I don't think that means you are bound to other people.... er.... even the oil.... any oil Scotland will have it sort of thing....

G: Oh, it wouldn't last that long....

P: (1) I don't think I agree with anything actually.... (2) I find it very difficult to agree with pro-Market things.... (3) I went to listen to Roy Jenkins (4) when he spoke in Edinburgh. (5) I couldn't agree with anything he said....

G: (6) Possibly....

P: (7) I couldn't agree with anything Ted Heath said

G: (8) I wouldn't say I necessarily agree with what the politicians say.... (9) but what I've.... learned about it.... and read about it I don't think.... er.... there's practically.... I mean it's all very well saying.... em.... that there's a change towards socialism in Britain .... I mean.... how is it likely to come Tony Benn.... I mean.. you wouldn't call him a socialist I suppose.... he hasn't all that great a following in Britain....

P: Well.... I'm not actually a lefty.... I'm no further than Tony Benn and Michael Foot and probably....

G: I mean.... their arguments are based on.... sovereignty and all that .... I mean.... any other thing....

P: But.... I think.... I mean Tony Benn's argument on unemployment there's a lot of underemployment in this country.... it could be getting on for the size he says and it's quite a reasonable way of calculating.... he divides £5000 or £10000 into the number of jobs

and he just gets it like that.... and it's obviously a rough calculation.... he doesn't say it's anything else but....

G: No.... it's actually difficult to answer.... I mean if there's so many companies involved in overseas operations.... I mean.... if they're operating.... in.... in a.... way that can be controlled and they'd be.... so's they'd be.... far more efficient.... but that is a different point of view I think....

Replies to the question of meaning of utterances.

Categories of responses:

The replies of the subjects to the questions about meaning, intentions, and interrelations among the utterances are first presented and then discussed.

The replies of the subjects to the question of meaning were divided into units such that each unit would say one thing about the target utterance. They were then divided into categories according to the degree of similarity amongst them in the way in which they related to the target utterance and the aspect of the target utterance to which they referred. A summary of the replies of the subjects together with the categories that emerged from them is presented in Table 1. In this Table the categories are listed first followed by the categorized replies of the subjects. The number of the utterance is given in the first column, the comments made by the speaker in the second column, and the comments of the listener in the third. In each entry in the second and third columns, a categorization of the reply is given first, and then the reply itself in brackets. The same conventions are followed in the presentation of the replies to the other questions.

Table 1

(1) Interpretations (including statements of the implications of an utterance), and the speaker's motivation for making the utterance, or what he was thinking. For example, in the second section in the ninth utterance the speaker said: "The community is inefficient, but that can be changed".

The listener commented on this utterance that the community was not rigid and therefore it could be changed. This comment was classified as an interpretation, because the listener mentioned that the community was not rigid, although no such information is expressed in the original utterance, i.e. because he went beyond what is given directly in the utterance.

(2) Paraphrases, labelling, explaining a word, modality. Responses in this category remain fairly close to the original utterance. For example, the speaker said "I don't think we can have socialism in this country", and he made the following comment on this utterance: "I don't think the country can achieve the aim I want". His comment is a close paraphrase of the original utterance.

(3) The act performed with the utterance and/or its function in discourse. Responses in this category include, for example, saying that the speaker was asking, checking etc.

(4) The effect of the utterance on the listener. Graeme's comment on one of the utterances that he is beginning to know Pete's position is an example of a response in this category.

Utterance No.	Speaker	Hearer
(1)	Paraphrase (presumed he was pro-market) Activity (asked, checking) Motivation (situation was embarrassing, had to say something)	Activity (establishing stand) Interpretation (he is against it)
(2)	Activity (explaining point of view)	Paraphrase (country's economic situation would be worsened by coming out) Modality (he is saying a negative thing) Explaining a word (it - coming out of CM)
(3)	Function in discourse (further explanation of my position) Activity (stating the same thing for a different point of view)	Function (it follows from no. 2) Activity (he is justifying no. 2)
(4)	Activity (justified staying out politically)	Labelling (Pete's point of view) Effect on listener (beginning to know Pete's position; gives an idea of how argument may go)
(5)	Labelling (my feeling; what I believe)	Activity (trying to give a case for staying out of CM) Motivation (because I said the country should stay in the CM)
(6)	Function (it explains why I am against it politically) Labelling (it is my idea of sovereignty)	Labelling (his view about staying in CM) Activity (he is stating it, a point of view different from mine)
(7)	Labelling (conditional) Paraphrase (if we want to implement one particular policy)	Activity or function (further explaining his statement; he is defining what he means by...) (implementing policies?)

Utterance No.	Speaker	Hearer
(8)	Labelling (statement stating my political position)	Activity (he made a statement about his political views; he made a statement toward that sort of institution)
(9)	Function (follows from no. 8, what I would like to see as a result of no. 8; states why I am against CM)	Activity (he explained how far his general political views went)
(10)	Paraphrase (don't think this country can achieve the aim I want)	
	Labelling (conditional)	Activity (he was explaining his political ideas; relating his argument to his wider political views)
(11)	Labelling (conditional) Function (if this condition does not exist it could be realized)	Activity (relating his views to particular argument about CM)
(12)	Explaining a word (I talk about CM and I mean its political institutions are not very effective at present)	Activity (gives another reason for his point of view)
(13)	Activity (checking that he agreed the community was ineffective)	Activity (he is offering his point for argument and discussion)
(14)	Activity (I was giving my views)	Paraphrase - (may be interpretation) (agrees with...)
(15)	Activity (I was telling him what I was going to argue about)	Activity (he is taking up what I said about being a socialist)
	Section 2	
(1)	Paraphrase (I am trying to	Activity (he is stating how

Utterance No.	Speaker	Hearer
	say that to achieve what I want in this country we must be out of CM)	strongly he feels about coming out of CM) Interpretation (he was saying he was looking at it from a totally different point of view)
(2)	Explaining a phrase (he talks about fundamental change and I meant a change in economic relationship: socialism)	Activity (he is bringing his political ideals, his general view of politics)
(3)	Speaker's motivation (I was not sure as to what I say and I was just repeating what I said in 1 and 2) Labelling (I am talking about a change coming about)	Activity (he is stating why he could not agree with what I am saying; he is destroying the basis of my previous argument)
(4)	The transcription was wrong about identity of speaker - none of them noticed it.	
(5)	Speaker's motivation (I wanted to know whether there were any arguments of the antis that he agreed with)	Activity (he is introducing the new direction he wants the argument to go in)
(6)	Goes together with 5 - no distinction	Activity (he is defining the arguments we could discuss and a basis for agreement)
(7)	Activity (I was answering his question; I was agreeing with them to some extent)	Paraphrase (he agrees with certain arguments of the antis)
(8)	Function in discourse (one point of agreement between us, it shows I am not totally in favour of the market as it stands)	Paraphrase (he reckons that the community does not work well)
(9)	Function in discourse - to indicate partial agreement only (although I agreed with him I didn't, it was not a real argument for taking the country out of the market)	Interpretation (that the community is not rigid and therefore it could be changed)

Utterance No.	Speaker	Hearer
(10)	Function: (another topic about which there may be some agreement)	Paraphrase (there would be a loss of power in our parliament which people call sovereignty)
(11)	Activity and function (explaining what I meant in last statement; giving a closer definition of what I was talking about)	Function (leading up to 12, does not mean anything in itself) Evaluation (it is confused)
(12)	Function (a statement of what my reservations are)	Paraphrase (the loss has occurred; no further loss is expected)
(13)	Activity (taking up another point he was talking about before)	Evaluation (it is confused) What speaker thinks (I think he is not quite sure where socialism fits)
(14)	Paraphrase (it just says that this is a wider argument than we could go into)	Paraphrase (it is completely different)
(15)	Activity and Interpretation (I was offering a point of view that by remaining in CM socialism could be realized in a more effective way)	Paraphrase (he thinks that all French, Italian and British socialists will have a greater effect by working together)
(16)	Evaluation (unclear)	Evaluation (unclear)
(17)	Interpretation (I am saying sovereignty actually does exist because he said it doesn't)	Activity (he was taking up one of the arguments that I put forward previously. He disagreed on the qualification that I put on the argument)
(18)	Activity (I was taking up an argument that he disagreed with; I was giving a better definition of what I was meaning before)	What speaker thinks (I think that he thinks that I am talking about political sovereignty and he is talking about economic sovereignty)
(19)	Activity (I'm stating one of the reasons why I hold my point of view)	Interpretation (we are dependent on the Arabs because of their oil)

Utterance No.	Speaker	Hearer
(20)	Function (another example supporting my argument)	Paraphrase (that we are also a member of the European Free Trade Area)
(21)	Function (another example related to a different area of foreign affairs)	Function and Interpretation (another example that we are in NATO as well and we have got obligations to that treaty)
(22)	Activity (I was asking him if he agreed with this kind of relationship and was showing that there were other areas apart from the ones we have spoken of)	Activity (he lumps all the other agreements together and reckons that we disregard all these)
	Section 3	
(1)	Explaining a word (when I say I don't agree with anything I mean I don't agree with anything in CM campaign)	Function (stating how fundamental his disagreement is with the CM)
(2)	Function (same as no. 1 but I add that I don't agree with pro-markat things, whereas in 1 I didn't)	Function (defining what he meant in the previous statement)
(3)	Function (goes together with 4)	Activity (he is giving a practical example of why he had those views)
(4)	Paraphrase (I went to hear Roy Jenkins speaking as a pro-market)	Paraphrase (he is saying where he heard pro-market arguments)
(5)	Paraphrase (I am saying I couldn't agree, I didn't find his arguments convincing)	Activity (he is giving his views of this particular speech)
(6)	Interpretation (I was not going to discuss that particular issue)	Function (Graeme is speaking) Paraphrase (reckons I could be right)

Utterance No.	Speaker	Hearer
(7)	Activity - function (I now replaced TH for RJ) Paraphrase (I now replaced Ted Heath for Roy Jenkins, I couldn't agree when I heard him)	Function (he is giving another practical example)
(8)	Activity and Paraphrases (I was stating that my opinions were not based on particular speeches by politicians)	Paraphrase (he does not necessarily agree with politicians)
(9)	Activity (I was explaining why I held my views)	Evaluation (confused) Activity (putting together having read about it and not seeing a change to socialism)

The replies of the subjects to the question of intentions are presented next. They too were divided into units such that each unit would say one thing about the target utterance, and then they were grouped into replies in terms of the management of the interaction, the structure of the discussion, and the 'illocutionary' and 'perlocutionary' effects of the utterance.

Table 2

Intentions

Categories of response

(1) Management of the interaction. Replies in this category point out the intention of the speaker in terms of the function of the utterance in the interaction. For example, saying that the intention of the speaker in asking a question was to give the other person a chance to express his view belongs to this category.

(2) Internal structure of the discussion. Responses in this category point out the intention of the speaker in terms of the function of the utterance in the larger context of discourse. For example, commenting that the intention was to provide an outline of one's view belongs to this category.

(3) The illocutionary or perlocutionary effect of the utterance. Replies in this category are mostly in terms of the effect the speaker wanted to produce in the listener, for example, to convince him.

Section 1

Utterance No.	Speaker's Comment	Hearer's Comment
(1)	Management of Interaction (because I was embarrassed just for something to say)	Internal structure of conversation (you have to start with something; it is an opening remark so that you know what you are talking about)
(2)	Internal structure of conversation (wanted to provide a general outline of my view)	Internal structure of conversation (that has been his main reason for being pro-market)
(3)	Internal structure (wanted to explain things in a better way)	Internal structure (to explain no. 2)
(4)	Internal structure of conversation (because... he justified staying in CM economically and I justified staying out politically)	Internal structure of conversation (to state his point of view)
(5)	Internal structure (wanted to go on to explain what I said in no. 4)	Internal structure (to state his point of view)
(6)	Internal structure (I felt I had to explain why I was against it politically)	Internal structure (to put his case - he was telling me why he thought we should change)
(7)	Internal structure (a lead for talking about socialism)	Effect on hearer (so that I knew what he meant by 'implementing policies')
(8)	Internal structure (because it is a reason why I am against the market)	Internal structure (clarifies his position, explains what kind of course he was talking about earlier)

Utterance No.	Speaker's Comments	Hearer's Comments
(9)	Internal structure (a declaration of intention - what I intend to see)	Internal structure (because he said: if you want to go one way.. he was trying to show in what directions he wanted to make changes)
(10)	Internal structure (because it is one of my main arguments against the CM)	Internal structure (to show how his argument in this context was related to his general political views - to show it was not just a particular situation he was objecting to, it was a wider more general objection)
(11)	Internal structure (no. 9 was not impossible so long as 11 does not apply; wanted to make clear that there was no possibility for socialism)	Internal structure (to bring the argument back to what we were here to discuss)
(12)	Internal structure (it was for something I said later - if the institutions were more effective... we can't implement policies of our own)	Internal structure (he gives another reason for his point of view)
(13)	Internal structure (checking) (I was checking that he agreed the community was ineffective)	Internal structure (he thought perhaps it was a more fruitful source of discussion)
(14)	Internal structure (I was giving my views)	Internal structure (I don't know - he wanted to say something else afterwards - he was not particularly interested in what I said before)
(15)	Internal structure (in order to tell him what I was going to discuss next, accepted his political standpoint, I was going to argue about what his views actually meant in the particular situation)	? unclear (he was thinking about what I said and I wanted to know why my socialism was connected with being against the market)

Section 2

Utterance No.	Speaker's Comments	Hearer's Comments
(1)	Internal structure of conversation (because I wanted to explain what I thought about what he had said before; it is leading up to what I said afterwards)	Internal structure (I was attacking what he disagreed with; to point out a difference in our points of view)
(2)	Internal structure (to make the point that unlike what Graeme thought, Pete was of the opinion that one could not achieve fundamental change in CM)	Internal structure (he is pointing out a difference in our attitudes pointing out opposite nature of arguments)
(3)	Internal structure (I felt I wanted to explain what I said in 2)	Internal structure (to show the difference in the previous argument)
(4)	Mistake in transcription	
(5)	Internal structure (because I thought we had gone on too long about this fundamental change and I just wanted to see whether we could find agreement)	Internal structure (checking) (he wanted to see what he specifically supported that I specifically disagreed with; trying to establish a basis for discussion, perhaps to see if I had considered any of the arguments that he said)
(6)	As above	Internal structure (he was trying to find some basis for agreement)
(7)	Internal structure (I was showing that there was some agreement between us)	Effect on listener (to make it clear that he is open-minded)
(8)	Internal structure (give one example of how I agreed with what he said; to answer his question; to show that I was not altogether in favour of the market)	Internal structure (to explain where he did agree with the antis)

Utterance No.	Speaker's Comment	Hearer's Comment
(9)	Internal structure (because I thought that there could be more serious arguments for staying out... to show that my support for the argument was qualified)	Internal structure (because he said that CM was inefficient; he wanted to say that inefficiency would not be permanent)
(10)	Internal structure (offering another point for discussion)	Internal structure (.. he is giving the second argument against the community)
(11)	Internal structure (pointing out that although I agreed with him I had reservations about this)	Internal structure (to explain or counter the argument he put in 10)
(12)	Internal structure (to show what the basis of the argument was; to show that this particular argument was not a strong argument for pulling the country out of CM...)	Internal structure (he wanted to counter the argument he put forward in 10)
(13)	Internal structure (pointing out that his political view was an objection to the market)	Internal structure (we have been talking about socialism, he wanted to see how this fits in with sovereignty)
(14)	Internal structure (recognition of differences of opinion - or that there was a different argument from what we were talking about in particular)	(don't know)
(15)	Internal structure (qualifying my opinion that his attitudes would mean bringing the country out of CM)	Effect on listener (... he wants to convince me that whatever you are doing - you have got more chance of success in CM)
(16)	Unclear	Unclear
(17)	Internal structure (I disputed what he said about sovereignty)	Internal structure (to show that there was a difference in our attitude towards that particular

Utterance No.	Speakers Comments	Hearer's Comments
		issue, that what I had said was not necessarily a point of agreement; he was stating his point of view)
(18)	Internal structure (I was taking up the argument that he disagreed with; I was giving a better definition of what I meant before)	Internal structure (he felt that I was off the track.. and tried to define his term so that we know what we are talking about)
(19)	Internal structure (giving an obvious example that supported my point of view)	Internal structure (he was trying to explain what he meant by economic sovereignty)
(20)	Internal structure (give further substance to my argument)	Internal structure (is another example of loss of sovereignty; to show that we have lost our sovereignty anyway)
(21)	Internal structure (to get another topic for discussion another example of how Britain is involved with other countries)	Internal structure (it is a political example) Effect on listener (the more examples he gave me the more convinced he would be able to make me...)
(22)	Management of interaction (giving him a chance to give his views about what I have said) Internal structure (generalizing the way that Britain is involved with other countries)	Effect on listener (he wanted me to think about the other agreements that we have)
	Section 3	
(1)	Internal structure (it was a new thing, a new direction, it did not fit in with anything else and I just thought I	Function (to show that he couldn't see anything which supported the argument for being in CM in the first place)

Utterance No.	Speaker's Comments	Hearer's Comments
	would tell him I find it difficult to reach an agreement if he stays pro-market)	
(2)	Internal structure (because I felt that I ought to explain what I said in no. 1)	Internal structure (to give a more specific point in his argument - he was stating his overall opinion over CM)
(3)	Unclear Gives an answer in terms of internal structure of interaction (paraphrase) (all I wanted to say is that I didn't agree with Roy Jenkins, he did not convince me at all)	Effect on listener (to show that he had listened to pro-market arguments; that his point of view was based on what he had heard himself and not on an ideological objection)
(4)	As above	Effect on listener (just he has been interested enough in the other side of the argument to go and listen to them)
(5)	Internal structure (to counter the argument of leader of the movement)	Internal structure (to point out how his views have been confirmed by what he had heard, how the arguments... didn't convince him or make him change his views)
(6)	Internal structure (to say that I could well agree if we went into it in detail; that speech wasn't a strong reason for holding the views he did; I could understand that he had disagreed with what he had heard in speech)	Paraphrase (?) (he didn't think there was anything special that I could not agree with RJ)
(7)	Internal structure (to try to reinforce a case; ...)	Internal structure (again showing that the speeches that he heard were not in accordance with his views)

Utterance No.	Speaker's Comments	Hearer's Comments
(8)	Internal structure (I was saying that there was a more practical level on which my arguments were based; my views were not based on what I had read in the press)	Internal structure (I had said I disagreed with politicians; he is saying that they are not always right)
(9)	Internal structure (to show that my views were based on a practical level rather than a basically political level)	Management of interaction (to change the subject because he was not interested in talking about politicians; he wanted to talk about socialism)

From Tables 1 and 2 one can see that the subjects frequently gave similar replies to the different questions. It is remarkable that in Table 2 the majority of the replies is in terms of the function of the utterance in the discussion. The significance of these observations is discussed after the replies to the question of interrelations among the utterances are presented.

Table 3

Replies to the question of relations among utterances

Categories of response:

(1) Clarification (repetitions included as well). Comments in this category suggest that the target utterance attempts to make clear something that was said earlier, for example, saying that an utterance "explains what I said before" counts as a clarification.

(2) Agreement - disagreement. Instances in which the subjects commented that an utterance expressed an agreement or a disagreement with what went on earlier were placed in this category. Accepting and rejecting an earlier point also belong to this category.

(3) Giving/adding information. In a way this category is a superordinate category subsuming all the others. Comments using the words "giving/adding information" or their equivalents that did not belong in the other categories were placed in this category. Comments in which the subject claimed that an utterance defined something mentioned earlier in the discussion were included in this category unless there was a clear indication that the target utterance excluded some alternatives (see category 7).

(4) Exemplification. Comments in which subjects said that a target utterance exemplified a point made earlier in the discussion were included in this category. Notice that some instances of this category may be subsumed under the category of 'clarification', the latter being in a sense a superordinate category.

(5) Generalization, particularization. Comments such as "this is a generalization of my argument" were placed in this category.

(6) Contradiction, negation, contrast, difference, opposition. This category is a conglomerate; all the components have in common an element of opposition. The components make it clear which comments were placed in this category.

(7) Restriction. Comments that point out that the target utterance narrows down the domain of something that was said earlier were placed in this category. The following example suggests that the meaning of the term 'sovereignty' is narrowed down: "We have been talking about sovereignty.... he wants to define the term.... he goes on to define what he means by economic sovereignty."

(8) Modification. Comments that make it clear that the target utterance modifies something that was said earlier were placed in this category. For example, the comment "this is a qualification of a previous argument" belongs to this category.

(9) Justification. Comments that draw attention to the fact that the target utterance justifies or gives reasons for something that was said in an earlier utterance were placed in this category.

(10) The position of the utterance in the argument. Comments in terms of

the position of an utterance or its function in an argument, as for instance the comment "I have been building up for it", were placed in this category.

(11) Conditional. This category included comments that the utterance was a conditional.

Section 1

Utterance No.	Speaker	Listener
(1)	Not related.	I didn't ask
(2)	Giving information (tried to give a basis for discussion - we didn't know each other's point of view, there are different ways of looking at it - there may be different reasons for each position)	Give reasons, justification (it is an explanation as to why he is pro-market; he is reacting to my previous question)
(3)	Adding information (further statement of my position)	(Self) clarification (it helps me understand what he is saying in no. 2)
(4)	Position relative to following utterance (I go on to explain it next) Contrast (contrast to his mentioning 'economically' in utterance no. 2)	Difference (I stated my point of view, he stated his so we both knew what the different ways of looking at the issue are; my point of view is based on an economic argument and his on a political and this statement establishes this)
(5)	Clarification (explains what I said before) (probably 4)	Justification (he says he is against it and then he is stating why he wants to change the status quo) (?? He is arguing about the change rather than about the situation that will come after the change)
(6)	Self clarification and position in argument (it is explaining what I mean by	Difference (it is a different point of view from mine and he is stating it)

Utterance No.	Speaker	Listener
	'politically' - and it is a lead in for saying I am a socialist) (says so in no. 8)	Restriction (he is defining his political ideas more clearly) (Implicit Contrast) (I made a statement why we should stay in, he had made a statement why we should come out)
(7)	Repetition (almost the same as no. 6) Position in argument relative to next utterances (and related to no. 8 in that it is a lead)	Giving information (he was defining what political attitude he had or his political objections to it)
(8)	Position in argument (I had been building up for it and the rest follows on from it)	Repetition and restriction (more concise way of putting the previous statement about implementing policies)
(9)	Position in argument (follows from no. 8 and in 10 I explain it further. I say what I am and then I say what I expect from being that)	Repetition (he is describing again political objects and why he thinks his point of view would be impeded by CM as it stands)
(10)	Condition (I think that it says that my intention of no. 9 can be achieved so long as no. 11 applies)	Giving information or justification (he is further explaining his general political stand - why being in CM would stop achieving these political ideas)
(11)	Condition (it is a condition to all I said since no. 6) Same as (it is the same as no. 5) Position in argument (it is unconnected to no. 12)	Adding information to clarify (it explains what courses meant in his general point of view in this particular situation)
(12)	(Intended) position (I was going to further explain what I said in 6 - 11 but didn't	Additional information and difference (a different part of his viewpoint; he is offering

Utterance No.	Speaker	Listener
	because I asked a question and was diverted. I felt that this would be a lead into it. I say the same things in 34 and 35 and in 36 to 41 I explain what I meant to lead in 12)	another topic for argument as well)
(13)	Position (answer to question) (it just relates to what happened before; I said in no. 12 'I think' and asked him what he thinks. I expected a 'no' answer, but he said 'Oh, yes'.)	Position in argument (giving me a chance to give my views on this last point)
(14)	Position - introduction (an introduction to what I thought was the more important part of what was said before)	Position - answer (an answer to what happened before. It is not really related to what happened)
(15)	Accept (I was accepting his political view in a general sense)	Position (it is related to what I said about being a socialist but not to my question and his 'yes' answer)
	Section 2	
(1)	Contradiction (I contradicted what he said before; he said you should have a fundamental change in G. Britain before you come out, and I said you would first have to come out)	Position in argument (changing the way the argument is going; he was about to talk about the more fundamental and basic situation) Difference (he pointed out one of the basic differences in our arguments)
(2)	Position (it follows from 1; coming out is a pre-requisite for this fundamental change I am talking about)	Difference (he is showing the difference in our points of view)

Utterance No.	Speaker	Listener
(3)	(Self) Clarification (explanation of what is said in no. 2) (I was a bit embarrassed and in 41 contradict what I said in 3)	Difference (he is pointing out how different his attitude is)
(4)	Mistaken identity	
(5)	Position (it is not related to no. 4) Position (he says where he argues with the antis in no.8)	Position (changing the direction of the argument) Restriction (it is a definition of what he was speaking about in the previous phrase)
(6)	As above	
(7)	Position (introduction) and agreement (it introduces what the agreement between us was)	Position (answer) (it is an answer to the question of 5 and 6) Inclusion (and he explains it in no. 8)
(8)	Opposition (it is a qualified opposition to his arguments)	Clarification and position relative to argument (it is explaining 7 and in 9 says that it is not permanent)
(9)	Modification (qualification of previous argument)	Contradiction (it is a pro-market argument contradicting the anti-market argument he gave in no. 8)
(10)	Position (additional answer) (a further answer to previous question)	Position (answer) (it is an answer to a question) Contrast and position (in nos. 11 and 12 he counters the argument that he puts forward)
(11)	Position (it leads into no. 12) Position (and follows as a counter argument to no. 10)	Restriction (qualification introduces what his reservations were)
(12)	Justification (explanation of my point of view; I just stated that the basis of	Clarification and position (he tries to explain no. 12 in 13 - it follows on directly

Utterance No.	Speaker	Listener
	agreement on one topic; I was explaining why this was not a fundamental argument)	from no. 10) Contrast (it is countering no. 10) Position (part-whole) (it is part of a whole with no. 11)
(13)	Agreement (I was recognising that I say his more general arguments were a valid objection)	Position (relative to 15) (it is closely related with 15 - when he starts talking about socialists changing the CM. He wanted to link up the sovereignty with the socialism that we have been talking about)
(14)	Difference (it points out the difference between his point of view and my way of looking at things; it was a different argument from the one we were talking about)	Does not know Position relative to previous utterance (thinks that it is related to socialist point of view mentioned in 13)
(15)	Restriction (qualifying the last point that I made)	Adding information (no. 15 is a definition of the socialist point of view in no. 13)
(16)	Unclear	
(17)	Position (it might be related to no. 16 because he, Graeme, did talk about sovereignty earlier) Contradiction (it is a direct contradiction of what he had said earlier, in no. 18 - 22 he argues that sovereignty does not exist)	Position in argument (he was taking up one point and offering this one for discussion) Disagree (it is a disagreement)
(18)	Position (I was taking up the point he made in the previous utterance and I was going to explain it further) Giving information (a definition of what I disagreed with)	Restriction and position in argument (we have been talking about sovereignty so he wants to define the term as he meant it and he goes on next (19-22) to define what he means by economic sovereignty)

Utterance No.	Speaker	Listener
	Particularization (I was bringing the argument to a particular level, a level I thought was the most important one)	
(19)	Exemplification (I was backing up my point of view with an example, an example of how the country could not totally live without the rest of the world)	Exemplification (it is just an example of what he had said in no. 18 and he goes on to give further examples)
(20)	Position and exemplification (continuation of what was said before, another example)	Exemplification (it is another example relating to no. 18)
(21)	Restriction (defining my objections, defining my argument)	Position in argument (relative to 18) (it does not really relate to no. 18 but it is meant to, because it is not an example of economic sovereignty)
(22)	Generalization (generalization of my argument and I was opening that point for discussion as well)	Position: summing up (it is a summing up of what he had said from no. 18)
	Section 3	
(1)	Position (it does not relate to what happened before and I don't explain later on) Repetition (I go on to say it in different ways) Position (it does not follow directly from anything that has been said)	Position (in argument) (changing the direction of the argument) Position and generality (bringing it back to a more general level of discussion. I have been bringing it to a more particular level)
(2)	Repetition and position (it is the same as no. 1, in no. 3 and further on I just carry on talking about it)	Giving information (he was just stating his overall objections to any argument for the market)

Utterance No.	Speaker	Listener
(3)	Position (it relates to no. 5 in that I say that I could not agree with anything that he said and 3, 4 and 5 are almost the same as 1 and 2, except that I am substituting Roy Jenkins for pro-market)	Adding information (he is explaining what he said in previous statement)
(4)	3 and 4 go together	Giving information (he is attributing his view to a specific person and place)
(5)	Similarity and position (R.J. spoke and he did not convince me, 3, 4, 5 are almost the same as 1 and 2 except R.J.)	Position (relating speech to general argument) (relating what he just said about particular speech to his overall argument against the market)
(6)	Restricted agreement (a qualified agreement)	(an interjection)
(7)	Same as: (almost the same as no. 5)	Adding information (extension of what he had said before)
(8)	Position in argument (changing the argument to a more general fundamental level)	Position (it follows from my not agreeing with politicians) Countering and rejection (he is trying to counter my argument - he tries to show that my disagreement does not matter)
(9)	Giving information (definition of the basis of my point of view) Difference (... and how it is different from his)	Position in argument (it does not relate to what was said before and it relates to what happened afterwards because he starts talking about Tony Benn and how the left have not got much of a following in Britain)

Now we can examine the questions raised earlier in the light of the data presented. The first question is concerned with the way a conversation

starts. From the model it was predicted that one of the interlocutors would propose a problem or domain of meaning to be investigated. However, in the artificial situation of the present study the problem was set for them. From their comments we can see that at least one of them, the one who spoke first, was embarrassed, and he started by checking the position of the other person.

The next set of questions concerns the process of interpretation. There is no direct evidence for the existence of two stages in this process, but the fact that the response to the question of meaning range from a labelling of the utterance through paraphrases to interpretations going beyond what is given directly is consistent with such a hypothesis. No definite conclusion concerning this hypothesis can be drawn however, since the data concerning interpretation were collected after the conversation and we do not know to what extent the processes of interpretation during the conversation and later are similar to each other. There may be random fluctuations in the interpretation in the two situations, but there may also be differences due to the fact that in the study people can observe the context of the whole discussion, and this source of information is not available during the conversation.

The question whether intentions are perceived is also part of the wider issue of interpretation. Inspection of the replies of the subjects to the question of intentions reveals that most of the answers given are in terms of the function of the utterance in the text, and that a considerable amount of repetition is involved. Perhaps this points out a difficulty for analysing meaning in terms of intentions in situations other than ritualized ones such as greeting, ordering, requesting, etc. The gross categories of intentions that were observed may nevertheless be psychologically real for some level in the process of interpretation. The answers also suggest that subjects' focus of attention is 'interactive', on the conversation itself, rather than on "illocutionary force".

Inspection of the table of responses to the question of relations among utterances reveals that most of the answers were in terms of the position of the utterance in the argument ("it follows from"... "it is the same as", etc) for both speaker and listener and only a few responses occur in the other categories but some examples occurred for all the categories of relations mentioned in the model. (No counts of frequencies will be presented

because the data are not structured enough to be quantified.) This pattern of responses may be due to the fact that the units selected for the analysis were too small, and the stretch of conversation analysed in this way is too short, but it may also suggest that more attention has to be paid to the structure within each turn since this aspect was emphasized by the responses of the subjects in the interview. Perhaps agreements - disagreements, rejection - acceptance occur at focal points in larger units, and these points are then developed in what follows. The method employed here would not reveal such a pattern, and because the method is so laborious it could not be extended to larger stretches of discourse readily.

A similar problem arises when one tries to examine the units that subjects used in describing the relations among utterances; normally the subjects referred to one or two units backwards or forwards in the text with a noticeable exception in the case of utterance 12 in Section 1 where Pete's expectations for a negative answer were frustrated and he said what he had planned for this place much later - three fairly long speaking turns later. But the point is that the method forced the subjects to employ small units in their judgments and therefore it is difficult to conclude that these are the units with which subjects operate.

Making predictions and testing hypotheses about what is going to follow entails employing larger units than the single utterance. A small number of examples suggesting the operation of this type of mechanism do occur. One such example was mentioned in the previous paragraph (see speaker's comments on utterance 12, Section 1, Table of Relations). Another example occurs in the listener's comment on the meaning of utterance 4, Section 1 where he says that it gives an idea of how the argument may go. However, it is difficult to know how to interpret this comment because it was made after the conversation. Besides, when they were asked, both speakers said that they had not planned in advance what they were going to say in the conversation. Thus there is some evidence suggesting that prediction has a role during the conversation, but it is not conclusive evidence.

Next we turn to the issue of sequences. The first question is concerned with what happens if a disagreement is perceived. Since I have not interviewed the speakers about the whole conversation and because of the problems with units in the interview data, I will pick out and briefly discuss three examples in which it seems that a disagreement occurred. The first

occurs when they discuss the advantages that Britain will gain by leaving the community:

> Pete: As far as I can see we gain everything by getting out because we wouldn't be contributing to the community budget. I think that if we want....
>
> Graeme: (simultaneously).... give anything back anyway I mean....
>
> Pete: No they don't give us anything.... they give us a few things to the steel industry and things now.... but.... during the last two weeks or so....

It seems that Pete's first reaction to Graeme's comment is a rejection of the point and then he goes on to add information supporting his rejection. The second and third examples both occur in the second section analysed. The first occurs in the first few utterances. Here we just find a rejection of the point made earlier. The second example occurs in utterance 17 and onwards. In this case it is followed by Graeme giving further information supporting his position. Thus sequences of the expected type seem to occur.

No evident examples of agreement have occurred in this discussion; therefore, I will not say anything about them. It is also interesting that hardly any requests for clarification occurred in this discussion, but repetitions and attempts at self-clarification were very frequent, and this may have caused the rarity of clarification sequences. This suggests that people may wait for a clarification without requesting it. The same observation has already been reported by Garfinkel (1967) and by Jefferson (1972). The model is obviously wrong in predicting that a clarification will be requested whenever clarification is required.

What emerges from this exploratory study? Some suggestions concerning levels of interpretation in conversation, concerning planning and prediction, sequencing and units employed in these processes seem to emerge. However, the method employed here leads to vague conclusions and the amount of work it requires from both subjects and experimenter makes it impractical as a general method of study. Part of the motivation for devising this method

was the belief that one ought to study the structure of conversation from the point of view of the people generating the conversation. But the question whether the description of conversational behaviour from the point of view of the participants differs from a description from the point of view of the other members of the same culture should be tested empirically rather than treated in an axiomatic fashion, once the criteria for such a description are defined. In the following experiments the question was investigated empirically.

Another belief that guided this study was that it is essential to concentrate on the process whereby a conversation is generated rather than the structure of the text, because otherwise one treats conversation as a script of a play, and this is inappropriate to the subject-matter. However, it is probably wrong to emphasize process at the expense of the structure of the text, and it is likely that one has to consider both of them in order to understand conversational behaviour and to answer the question set earlier about putting meanings together. Better understanding of the structure of the text is essential, and the following experiments were directed to this issue as well.

2.3. Theoretical background for the following studies

On the level of text structure one can think of three types of structure that will differ in their relative cohesion. One possible structure is for things said by each of the speakers to be related but the things each says are unrelated to what the other says. Such a structure will be generated if each of the speakers has a ready monologue, and they take turns in speaking, but each disregards what the other says. Another possible structure would be 'chaining' (4): here each thing is related to the previous one but there is nothing relating all of them. I suppose that parts of gossip sessions and associational conversations will frequently have this structure (unless 'fresh news' functions as a central and unifying theme). It will occur if the conversation has no central theme, and each thing said is just linked to the preceding one. A third type of conversation is one that has a central theme and the things discussed (the topics or referents) are both interrelated and related to the central theme. These descriptions involve idealization and in any real conversation there will, of course, be a mixture of them.

The question of how a structure of the third type is generated can

be phrased in at least four ways:

(1) How is unity of content achieved?
(2) How are the contents interrelated?
(3) What are the constraints on contents operating in dialogue?
(4) How do people decide what to say next so that things fit together, what are their criteria for what fits, and what means do they employ to satisfy them?

The means for achieving this type of structure will probably include negotiation about the central theme, and each of the interlocutors will try to make his contribution relevant by relating things both to the central theme and to the things that have been said so far. Everything that is said after a central theme has been established will be interpreted with the assumption that it is related to both the central theme and to the other topics in the text, especially the one preceding it.

The concept of relevance seems to be of crucial importance here. This concept has been discussed by Grice (1968, summarized in Clark and Haviland, forthcoming). In the terms of Grice relevance is part of the co-operative principle and breaking it will have consequences. It seems to me that slight deviations from what is relevant will be ignored (5). Stronger violations will make the listener try to infer how things are related, and he may even have to ask the person who spoke how things are related. If the principle is violated repeatedly the listener may draw the implicature that the speaker is trying to avoid the issue, being funny, or he may think that something is wrong with the speaker, and communication may break down.

It seems to me that there is a continuum of relevance and the position of a given utterance depends on the explicitness and directness of the relations among referents. We can use these criteria as a basis for analysing a text. We can ask the question what the whole conversation is about, and the reply will be its theme; an example would be: 'Should Britain stay in the CM?' At each point in the discussion we can ask what is being said, and the answers will be different topics or referents; examples from the CM discussion will be socialism and tariffs. These referents are related to each other and to the theme by means of the dimensions of meaning described by Kreitler and Kreitler (1976) that were mentioned earlier (the dimension tells us which

aspect of the referent is covered by the communication, for example, causes and effects, what it includes, etc., the value is the specific thing said about it). A relation may be explicit (as opposed to implicit) which means that the way the referents are related is stated in the text. A relation will be called indirect if the referent is related to another referent, but not to the theme. From this description the text appears to be a network of interrelated referents and all of them are related to one referent (the theme).

Now we can return to the concept of 'relevance'. In the terms of the scheme just described, if the referents in a conversation are related to each other and to the theme, relevance will be maximal. To give an example, in a discussion on the theme 'Do universities fulfil their function' one of the interlocutors said: "I think that there's more to university than sheer education.... I think of it as a social institution more than just a place where you go and get lectured to and discuss things in your tutorial". In the first utterance in this example one of the functions of universities is mentioned, namely, education, but the speaker makes it clear that there are additional functions, and in the second utterance he mentions one of them (even though it is expressed as a belief about universities). Thus, the second utterance is related to the first one since it enumerates another function of universities, and it is related to the theme since it deals with the function of universities. We expect this example to be judged as highly relevant. If either of these relations is implicit, the 'relevance' of the unit of discourse will decline because of the ambiguity. This is the case in the following example from the discussion mentioned earlier:

B: I don't think it'd be any less self disciplined if you had, say, for example, a psychology tutorial once a week instead of once a fortnight....

A: May be psychology has failed....

The first utterance discusses how universities could fulfil their function better, and a concrete example is given from psychology. The second utterance is related to the first one since both mention psychology, but the second utterance probably implies that psychology is only one of the sections that a university includes, and that one cannot generalize from it to universities as a whole, but the relation of being part of a university is not made explicit. This example is likely to be judged as relatively

less relevant than the previous one. There will be a sharper decline if referents are related indirectly, through other referents, and the longer the chain the more irrelevant things become. In the following example from the same discussion the underlined utterance is related to the theme indirectly:

B: .... you could always look at the system of education. .... the way education is done through lectures and tutorials....
A: Do you think may be it's not personal enough? That may be universities failed in that sense?
B: Yea.... I feel.... lectures are not such a good thing as tutorials .... But they are certainly too impersonal since.... you're here and the lecturer's out there, talking, and I imagine there are very few folk dare raise points <u>though I've done it once in one lecture</u>.

In the first speaking turn B draws attention to the manner in which universities operate to fulfil their function. This leads to an evaluation and comparison of lectures and tutorials; the first utterance in the excerpt relates this issue to the theme. The underlined unit is a counter-example to what the speaker was saying about lectures, and it is related to the theme only through the previous unit. We expect this example to be rated as less relevant than either of the previous examples(7). An utterance will be irrelevant if it is difficult to find a dimension of meaning that will relate its referents to the other referents in the text. For example, the last comment in the following excerpt from the same discussion relates to the situation, but not to the discussion itself:

B: I think we're basically agreed on this....
A: Yea....
A: But again we are a biased group....
B: .... Yea....
A: I suppose students will always be biased when it comes to university education. Can't have your cake and eat it....
A: <u>Well, we are about talked out</u>.

We expect this example to be rated as least relevant as compared with the other examples discussed in this section.

The three experiments to be described next attempted to test the

relationship between some structures in the text and the perception of relevance.

2.4. Experiment 1: Judgments of relevance in a discussion

2.4.1. Introduction

The aim of the experiment was to find out whether the way referents are related affects the judgment of relevance in a discussion and, as a methodological issue, to find out to what extent there is agreement in this judgment between the interlocutors and between them and a group of independent judges.

Thus, the hypotheses were:

(1) Judgments of relevance will be in the following order: it will be maximal when referents are related both to the theme and to each other, it will drop when one of these relations is implicit, it will drop further when the referents are related indirectly, and the longer the chain linking them, the less relevant they will be, and finally relevance will be lowest when one cannot conceive of a way of relating the referents.

(2) The judgments of relevance of the interlocutors will be positively correlated and their judgment will correlate with the judgments made by an independent group of judges, if the interlocutors do not use much information that is not available to other observers.

2.4.2. Method

2.4.2.1. Subjects:

Two first year psychology students, both males, discussed the issue 'Do universities fulfil their function?'. They and another group of 18 subjects judged the relevance of a sample of utterances to the discussion.

2.4.2.2. Procedure:

Since the subjects were not acquainted with each other, it was considered advisable to enable them to get acquainted with each other before

recording their interaction. They were given coffee and left alone to chat for about half an hour. Afterwards the experimenter returned and told them that they were to discuss the issue 'Do universities fulfil their function?' for about ten minutes. Instead of giving them reading material as in the other experiments, they were allowed to think of arguments. They made brief notes of what they thought. Their notes are presented in Appendix 4. When they finished thinking, they were taken to the room where the recording equipment was set, and they were asked to discuss the issue. I shall mention here that there was a one-way screen in the room because this influenced their interaction at one stage when they thought that the experimenter was concealed behind it.

Their interaction was transcribed, and the transcription is presented below.

Do universities fulfil their function?

A: Well....

B: You can start.

A: Some people like to think universities have failed in a sense. They haven't fulfilled their roles because a small percent of the population is educated.... er....

B: Yeah. I suppose so.... its all a case of they have.... they always take the cream from the education.... from the feeder schools and I suppose it's a case of only a few get them. I suppose they have to keep the standard up to a certain extent.... try not to....

A: Super standard?

B: .... everybody passing

A: Well, of course if you did educate everyone and everyone had a Ph.D., then you'd have Ph.Ds as dustmen and doing menial labour....

B: Exactly.... yeah....

A: .... and it would just be a waste of.... waste of money....

B: .... you'd have something else above a Ph.D.

A: Tremendous waste of money and time.... and pride on the part of people involved

B: Yeah.... I suppose so

A: On the part of individuals and society.... it would be quite a waste

B: Yeah.... you could always look at the system of education. How the.... the way education is done through the lectures and tutorials the....

A: Do you think that may be it's not personal enough? That may be may be.... the universities failed in that sense?

B: Yeah.... I feel the lectures are.... well lectures are not such a good thing as tutorials though I suppose they're useful in the sense of helping you to align your reading to a certain extent. You can't have everything done through.... through tutorials, I suppose. But they are certainly too impersonal since.... you're here and the lecturer's out there, talking and I imagine there are very few folk dare raise points though I've done it once in one lecture. [A]

A: Been shot!!!

B: Yeah! (laughs)

A: Well let's see if.... if we er.... I think may be that one of the ideas behind this system, you know, where it's just a limited amount of tutorials may be to teach a personal discipline. You teach yourself basically and what you truly teach yourself you learn. It calls for more responsibility on the part of the student.

B: Yeah.... er....

A: Self discipline....

B: Yeah.... I think.... though.... I'd imagine that.... I don't think it'd be any less self-disciplined if you had, say, for example, a psychology tutorial once a week instead of once a fortnight. You'd have.... this means that you'd get more contact with the other psychology students in your class.... in your tutorial group which I think is quite important because you'd find out how they were getting on for a start.... you'd know if they were finding it as hard as you were.... and see that.... em something.... but....

A: Maybe psychology has failed.... [B] I think in general of.... I mean unless you spell everything out for people.... er.... you could do that but then....

B: Yeah

A: .... you're not allowing the student then to learn on his own....

B: Yeah, especially....

A: .... I think it's part of the university - maturity

B: Yeah.... especially Arts subjects - Arts and Social Sciences - not a case of learning something that is what it is, [C] like I suppose, maths and physics - though my knowledge of maths and physics is not exactly large. I get the impression that you learn something and that's facts and once you know it you know it - you don't discuss it. It's just fact which they accept generally but....

A: It's hard to argue with a physical law [D]

B: Yeah.... this is true. You always say.... sometimes you get the feeling that.... em.... the students aren't necessarily the most important part of the university.[E] That they go in for a lot of research and that lecturers and professors are appointed because they're.... because they've written so many books on it.

A: Like publish or perish [F]

B: That's right.... You've got three or four books rather than being a very good lecturer and can make your point across very clearly and make it interesting at the same time....

A: I guess it's hard to find people who are both [G]

B: Yes.... I suppose so....

A: At least they are people who have pushed the frontiers in some way.... either they're specialising in research or generalising in textbooks. They can always use their own textbook if they couldn't lecture well!

B: Yeah.... I suppose so. Of course I think.... I think that there's more to university than sheer education.... I think of it as a social institution more than just a place where you go and get lecturered to and discuss things in your tutorial.[H]

A: Sort of societies where you.... er.... are presenting an arbitrary step towards maturity - manhood.... whatever....

B: If you don't go around joining all sorts of societies.... I'm sure... there's so many societies in this university there's something for everybody. I'm sure there's nobody who revolts at the thought of every single society. But I would imagine that this sort of thing's quite important in.... growing up - becoming more mature rather than spending all your time working in your room.

A: Yeah.... I think it's a plus for this system that it isn't assumed you'd remain in your room studying all the time.... you're not cut off from the other students. You're basically independent from your parents. You're allowed to make your own decisions.... it's a sort of the first.. test case.... you against the world you know....

B: Yeah.... er....

A: Er.... I'd like to think that the universities fairly well achieve what they're designed for [I].... they're presenting a system which the student can use to his advantage as he chooses.... if he.... if he messes around - parties all the time and doesn't make use of the facilities.... then it's his loss. It's his decision and he suffers

for it possibly.

B: I suppose so.... yeah.... but for a lot of people it's quite a break in style of education from school. I don't know what the American system of schooling is but.... well, I was lucky in the last two years at school.[J] We got.... we were basically lectured to.... we had lectures.... though they were small classes they were run on a lecture basis and so I was.... I got the hang of how to sit in a lecture and take notes, et cetera. I'm sure there are many folk who came to the university here....

A: Who are borne away....

B: .... who sort of sat there and resolved they write down every single word which the lecturer says which is a really stupid thing to do.... you just end up with tennis elbow or something (laugh)

A: Writers' cramp?

B: Writers' cramp.... yes.... but I don't think you really get anywhere if you write everything down. I feel that to a certain extent the education system could be improved on.... er.... by....

A: In specific areas like.... more tutorials in psychology....

B: More tutorials.... yeah.... more tutorials in general.... I suppose, yeah, you'd have to increase the number of.... amount of staff to do this sort of thing and hence increase education spending on the part of the government which.... I'm sure there'd be somebody who'd complain about that

A: But other than perhaps this one area.... are you inclined to feel that.... except possibly more tutorials.... in general the system has succeeded?

B: Yeah.... I think so.... well I think....

A: You wouldn't say.... that rules are so tight that people are forced to study certain courses and the obligations there aren't so great that there's no breadth.... there's not a society of technicians then?

B: Yes.... I think it's a case there where you've a large choice.... you can vary your choice of subjects.... I don't know if that.... is that the point you're making here?

A: Yeah

B: You can change your subject basically.... you can basically change all three subjects at the end of first year practically or if you keep on going you can vary two and keep one on

A: And so again the system assumes that as.... an adult or near adult, the student educates himself basically.... on general matters.... keep him-

self abreast of world matters, affairs in the news, current events....

B: Yeah....

A: .... while simultaneously he's specialising in one area which he may swop for another....

B: Yeah.... that's true

A: .... so it allows for breadth [K]

B: Yeah.... I would have thought.... basically the.... I feel it's fairly flexible in this university anyway - I don't know about other ones - but the system is fairly flexible here.... you can chop and change a wee bit - you've got helpful staff which most of the staff are.... very helpful really

A: I guess we're not really.... we're sort of a biased group in the sense that if we really didn't like university we wouldn't be here....

B: Yeah

A: .... that's simple.... terrible

B: Yeah.... but then.... I suppose, to get back to the.... societies point of view you've all your political groups.... certainly.... I'm sure it certainly increases the amount of political consciousness in students.... a lot of students get....

A: .... socialism, communism....

B: .... affected by Socialist Worker

A: Right.... so exposure's a big thing.... independence - exposure. I think in most.... most extensive exposures in opportunity.... I think the university succeeds, possibly needs to press a little more tutorials

B: Yes.... I think it's quite good.... you sort of get change.... your life style changes completely.... you get completely cut off and to some extent you get thrown into something which is completely new [M]... which is completely new to you....

A: Yeah....

B: .... but I reckon most folk who have got intelligence at university standard can adjust to this sort of thing without much difficulty

A: So our consensus is generally plus....

B: I think we're basically agreed on this....

A: Yeah....

B: .... I think and....

A: But again we're a biased group....

B: .... yeah....

A: .... as students

B: I suppose students will always be biased when it comes to university

education. Can't have your cake and eat it really, no matter how hard we try

A: Well, we're about talked out [N]

B: Yeah, you can come in now [O]

A: Do you think he's back there?

B: I'm sure he's behind that windscreen

A: Ah.... it's possible.... I don't know

B: Any more points to make?

A: No.... no I think we are....

B: The fifteen minutes are up

A: I wonder what they would have done if there had been a fist fight

B: Yeah.... smashed up all the recordings

A: All this is going to be.... you know.... cut off anyway so....

B: Yeah, how well is that recording.... (click) that one's alright.... (click) it's stereo.... it's hardly moving when you speak

A: Hallo-allo-allo

B: Is anybody there?

A: It might be just pitched up.... I don't know. Actually, we have about four more minutes to do on this [P]

(long break)

B: Umm..... I certainly feel that my political consciousness has changed since I went to this university.... you sort of get your.... I think your views crystalise to a certain extent

A: You're forced to take a stand

B: Yeah.... you're....

A: What are you then?

B: You get the Socialist Worker shoved at you - you have to say "yes I want it" or "I don't want it".... I imagine most of them don't want it but....

A: I just say "We don't have that in Texas!"

(laugh)

B: But then you get your sociology lecturer and he stands up there saying things that you totally disagree with - what do you do? [Q] I find that things crystalise simply because they have to crystalise.

A: Certainly university forces you to mature to an extent [R]

B: Yes.... yes or you don't survive really

A: No - it's not a terrible thing being forced to mature.... as long as there is proper exposure in a wide field so you're not limited in scope.

B: Yes, it's basically very varied.... all the things.... 'cos the amount of subjects for a start you can study vary from astrophysics to economics or social anthropology....

A: Thousands of subjects.... hundreds of clubs

B: .... to ancient sanskrit or whatever it's called.

A: Elementary Bantu

B: Yeah.... things that you never imagined existed at school.... which is one sense why it's a great improvement on school, I think.

A: I think I saw a flicker [S]....

B: Ah.... is he coming in or is he not?

A: I don't know. Let's not think about it.... er....

B: Er.... yeah.... so I just hated somebody who saw this University calendar which my elder brother had and told us what on earth are you doing just vaguely knowing what it was about....

A: I think.... like this university especially is great for exposure.... it's in the city yet its got, y'know, a park.... it's some of nature and some of man.... there's hospitals.... areas for social opportunity and obligation and research.

B: How different is this from American universities? [T]

A: Well.... similar. The basic differences like course-wise.... er.... whereas we would average a course-load of may be five courses, here it's generally three and two if you've a heavy load of science or something....

B: Yeah....

A: .... so ours is perhaps a little less vigourous than you have here.... but in a sense you see, we end up knowing more about less.... no - we know less about more and you know more about less, right? .... and there are arguments both ways....

B: Yeah....

A: .... that.... er.... our graduates don't know anything, you know, about their majors, you know, they just know about music and art.... and - em - some people would say "Britain moulds a society of technicians"... but it all works out in the end.

B: So, is it.... well, in Scottish education.... er.... secondary school education is different from English education.... 'cos it's.... the great argument is that the reason why Scottish education is, quote, 'much better than English education' which is debatable though.... ah.... here he comes [U]....

A: We'd already finished.... we reached a consensus about five minutes ago.

B: We just generally discussed things in general.

A: It was roughly about 15 minutes.... I guess the tape was longer than you thought.

The text was then analysed using the scheme described earlier and five examples for each of the different categories in the hypothesis were selected from the text. The utterances selected are underlined in the transcript. (See also Appendix 5)

Utterances H, I, K, M and R have been selected as examples of cases in which referents are related both to theme and to each other. Utterances B, C, E, F and T are examples in which one of the relations involved is implicit. Examples in which one of the relations is indirect occur in utterances A, D, G, J and Q. Cases which are difficult to relate occur in utterances P, N, O, S and U. In selecting these examples I have attempted to represent both speakers equally and to sample from different parts of the text.

Each of the interlocutors came for another two sessions after the discussion in order to judge the relevance of the above mentioned utterances in the text. Each subject was first shown the whole interaction after being told he was going to watch a discussion on TV on the issue "Do universities fulfil their function?", and that there was a one-way mirror in the room where the discussion was recorded. After seeing the interaction the following instructions were given to the subject:

"Now I will show you the recording again and ask you to judge the relevance of some of the utterances. I will tell you which ones you have to judge. Try to think how relevant each of them is in the specific place in the discussion and in relation to the whole discussion, and assign to it a number between 1 and 10 that will reflect your judgment - where 1 is least/most relevant and 10 is most/least relevant. Write the number opposite each utterance number on the response sheet in front of you. You are allowed to change your mind about your judgment, but try to give your first response, if possible. Do not put all the items in one category; try to vary the categories you use. In case you want to see a section again, tell me. If you want to comment on anything, do so on the sheet of paper

on which you write your judgments. Are there any questions?"

A transcript with the target utterances underlined was lying in front of the subjects. The responses were made on a sheet of paper on which the numbers of the target utterances appeared. If the subject tended to read the transcript rather than watch the interaction, he was asked not to do so. The experimenter stopped the recorder after each of the target utterances was heard.

Half the subjects did the rating so that 1 was least relevant and 10 most relevant. The direction of the scale was reversed for the other half of the subjects. The interlocutors, who did the judgment task twice, had the scale in a different direction in each session. Roughly a week passed between the two sessions in their case.

It should also be mentioned that while running the subjects in the judgment task, the experimenter kept the analysis and the categories to which the utterances were assigned locked in another room.

2.4.3. Results and discussion

The results concerning the reliability of the judgments and intersubjective agreement are presented before the data pertaining to the main hypothesis because in a sense we need them before we can interpret the rest of the data.

Reliability was assessed by correlating the judgments that each of the interlocutors made in the two judgment sessions in which they took part.

In order to test intersubjective agreement their judgments for the two sessions were averaged and the average ratings were correlated. The scores for each of the utterances for the whole group (but excluding the interlocutors) were also averaged, and these averages were correlated with the averages for each of the interlocutors. These correlations are presented in Table 1.

Table 1

Test-retest reliabilities for interlocutors and correlations between them and group of judges

Variables correlated	r	p
Speaker A - Session 1 x Session 2	0.9359	< .01
Speaker B- Session 1 x Session 2	0.8934	< .01
Averages of Speaker A x Averages of Speaker B	0.6206	< .01
Averages of A x Group Averages	0.8983	< .01
Averages of B x Group Averages	0.7609	< .01

The data were also normalized by means of the tables for transforming ordinal scores in Fisher and Yates (1953) but since the transformed scores give results practically identical to those of the raw scores, their analysis will not be presented. From Table 1 we see that judgments are highly reliable and that the intersubjective agreement is good. There seems to be a slight inconsistency in the correlations in that the correlation between the interlocutors is not high whereas the correlations of each of them with the group mean is high; this may be a statistical artifact created by the fact that the different means compared are based on different numbers of observations. At any rate, all correlations are positive and significant, which is consistent with the claim that there is agreement between the interlocutors and another group of judges. Therefore, we can proceed to analyse the data concerning the effects of text structure.

The judgment data of the interlocutors and other judges were pooled together and an analysis of variance was carried out. The data formed a partly hierarchical design with repeated measures (see Clark, 1973; Winer, 1971). The quasi F calculated was $F'' = 11.2616$ with 3 and 60 degrees of freedom. This F" is highly significant ($p < .01$). An analysis performed on the transformed scores yielded identical results. The significant effect means that there were some significant differences in the evaluation of the relevance of the different categories of structure in the text.

Next we should examine the means and the differences among them to see whether the differences found are the ones that were predicted. The means of the judgments and the differences among them are presented below.

Table 2

Means of judgments of relevance for the different categories and differences among them

Category 1 = referents related both to each other and to the theme
Category 2 = one of the above relations is implicit
Category 3 = one of the above relations is indirect
Category 4 = referents are difficult to relate

Category	1	2	3	4
Means/Category	7.52	6.185	5.24	3.15
1	-	1.335(*)	2.28**	4.37**
2	-	-	0.945	3.035**
3	-	-	-	2.09**
4	-	-	-	-

From Table 2 we see that all the means are in the predicted direction. The entries below the means are the differences among the

means. The significance of the differences has been tested by means of Tukey's test, and the differences that are significant are marked by asterisks. The difference between means 1 and 2 is not significant according to Tukey's test, but if we used a more powerful test, as for example the Newman-Keuls test (Winer, 1971) we could declare the difference between means 1 and 2 significant at the 5% level; Tukey's test is relatively conservative (Winer, 1971). The difference between means 2 and 3 is in the predicted direction, but it does not reach significance. Thus, on the whole, the data are consistent with the predictions made concerning relations among referents in the text and judgments of relevance of these utterances.

The problem with this conclusion is that it assumes that the analysis of the text is correct, and that this is what determined the responses of the subjects. Can this claim be supported by the comments of the subjects? Unfortunately, there were not many comments made, and those that were made were sometimes directed to other aspects of the situation. But some of the comments are interesting and they are presented in abbreviated form. They are categorized according to the categories to which the item belonged to which they were made.

List of Comments

(1) Referents related to each other and to the theme

Utterance	Comment
H	- Introduction to next point - Discussion has finally pointed out a specific function - Switch in topic; relevant to the general topic of role of university; the same applies to comment I.
I	- This is what is meant to be the object of the discussion. - Summation, his conclusion
M	- Important statement; summarizing the whole bit of conversation

(2) One of the relations is implicit

Utterance	Comment
B	- Too specific for what I expect from a student of Psychology.
C	- Example of reading style
E	- This argument does not follow.
F	- Shows sympathy with other view, but a restatement; therefore redundant
T	- Request for comparative information. Useful
	- It is important to compare systems in different countries...
	- Relevant partly to the discussion and partly to the situation

(3) Referents related indirectly

Utterance	Comment
A	- Relevant in context
	- Illustration of point
	- From student's point of view education is the primary function, they are too shy in expressing it
D	- A joke related to the interaction but not to the discussion
G	- Important, but not of vital importance to the discussion
J	- No direct relevance
	- Introduction of new topic
	- Leading into argument
	- An example
Q	- A spontaneous comment

(4) Unrelated referents

Utterance	Comment
N & O	- Attempts to end interaction - Says much about the situation - Relevant to present style of discussion - Relevant to experimental context
P	- Relevant because it shows lack of ideas about the subject and about their lives - Trying to get back to discussion - Relevant to experimental context
S	- Relevant in experiment - Irrelevant - Shows he wants to go

These comments will not be discussed in detail, even though some of them are extremely interesting. It is worth mentioning that in cases where referents are related we find comments like "this is what is meant to be the object of discussion". Perhaps there is a tendency to supply or infer a relation when this is implicit, and to be disturbed about it (e.g., "this argument does not follow"). The comments about the unrelated referents are mainly attempts to interpret them as somehow related ("relevant to situation", "relevant to present style") some implicatures occurred ("he wants to go") and the simple comment "irrelevant". But the comments do not provide very clear evidence in support of the hypothesis.

To conclude, the data support the experimental hypotheses concerning intersubjective agreement, and the predictions concerning judgment of relevance are confirmed on the whole. The demonstration would have been much stronger if an independent way of demonstrating the structure of the text had been found.

2.5. Experiment 2: Judgments of relevance in a discussion: interlocutor instructed to be irrelevant

2.5.1. Introduction

This experiment was a replication of the previous one with a few changes introduced: one of the subjects taking part in the discussion was asked to make her contribution irrelevant, and the theme was changed too. It was hoped that the instruction to be irrelevant will result in a wider range in the phenomenon of relevance. It also involved a very gross attempt to interfere with the process of production of conversation.

The hypotheses in this experiment are the same as those of the previous one; in addition to the hypotheses we have the open question of what will happen in such a discussion.

2.5.2. Method

2.5.2.1. Subjects:

Two volunteer female students took part in a discussion, after which they made their judgments twice. Another group of 18 subjects did the judgments. Subjects were paid in this experiment. The data for one judge who seemed not to understand the instructions were discarded.

2.5.2.2. Procedure:

Since the subjects who took part in the discussion knew each other very well this time it was not necessary to introduce them.

Both subjects were told that this experiment has to do with the structure of conversations and that they were going to take part in a discussion. They were also told: "Both of you are going to read excerpts from a summary of a case history of a juvenile delinquent. Afterwards you will be asked to discuss the issue: what should be done about him? Should he be severely punished or should one give him the love he needs? Try to consider this issue". Both read excerpts from the case history of Johnny Rocco (Evans, 1952). The excerpts are presented in Appendix 6.

One subject was told before the discussion: "Now you will be given about a quarter of an hour to discuss the issue: what should be done with Johnny, how should he be treated, should one punish him or try to give him love. If possible, try to reach a position that both of you agree with. I should like to compare your decision to that reached by a group of experts,

and see how closely you agree with them."

(B below)

The other subject was given the following instructions: "Now you are going to discuss the issue of what should be done about Johnny, should he be punished or should he be given the love he needs. Try to make your contribution to the discussion irrelevant. Your friend does not know that you have been instructed to behave in this way, and, if possible, don't tell her".

Their discussion was then recorded, and the deception revealed. The discussion was transcribed, analysed, utterances belonging to the different categories of the hypothesis were then selected and used for judgments of relevance in a manner similar to that of the previous experiment. A summary of the case history was presented to the judges so that they would not have to guess too much about the discussion, since both interlocutors presupposed familiarity with the text. The summary is presented in Appendix 6.

A transcription of the interaction is presented here.

A: Go

B: I think he must see us....

A: I wonder whether it is one of these two-way things....

B: Yeah.... I can see through it.... I can see there is a camera there as well (laughs)

B: Have we to start when he knocks on the window?

A: I think so, yes. I think we've got to start now

B: Right (laughs)

A: It took me a long time to get.... to read all.... that stuff. It seems as if he's.... you know.... he just sort of.... all round him has been so frustrated and....

B: One of the classic examples of having a poor background and.... poor upbringing it seems

(pause)

B: He liked to have.... he liked birds.... that's the one I think he liked A because he.... wants to free them and he didn't like being cooped up

A: Yeah.... this business about when he was with Mrs Baker and er.... em.... noticing the.... the plants and.... em.... you know.... sort

of touching them and the rest of it.... but em....

B: Do you think that.... em.... he'd have been totally different if he'd been brought up in a completely different background.... it's completely his background that was dictating his behaviour? [B]

A: Well, that's certainly the impression I was given by the article.... I mean it's not clear.... it's all written rather em.... er.... sort of.... not exactly from his point of view but.... it's obviously someone fairly sympathetic

B: Um.... like O'Brien

A: Yeah.... er I don't know, it's difficult.... he seems to have em.... you know.... been absolutely craving attention all the time and.... and his mother never took any notice of him or didn't seem to or she was so run down.... she's very....

B: (same time).... she's very tired....

A: .... not very intelligent.... and tired
(pause)

B: But there aren't lots of people like that about.... what are you meant to do with them, I suppose, put them from foreign home to foreign home....

A: No.... take them out of their.... certainly out of their.... the environment he was in [C] and.... um.... I think the worst thing was to ignore him.... you know how he said that the teacher and the other kids just ignored him in class

B: Um....

A: And he.... and the way he sort of tried to shock the Mother Superior out of her wits you know by.... saying that he was.... he was rotten right through

B: Um....

A: He's just obviously.... he was dying for some reaction from somebody

B: Um.... that may be why he turned to religion 'cos he....

A: Yeah.... (same time) that's funny, isn't it?

B: Perhaps it was all that deep down confession that he wasn't going to make of something that he'd done that he was worried about

A: Yes.... it was about this sin that he had committed and he was going to confess.... and he.... even in the sort of confessional box he.... where it's supposed to be anonymous.... he was.... you know.... he came up against his background.... you know.... he....

B: Um....

A: .... protest. But what.... it seemed em.... you know he went to

Mrs Baker's and she kept him at home.... em....

B: Um.... yeah....

A: Ten weeks or so.... it seemed you know as if he was going to.... start.... responding to that sort of thing.... and then suddenly for some sort of red tape reasons he was taken away....

B: Um....

A: .... and put on a farm (pause) Which makes you feel that the whole thing was you know not run for.... the....

B: .... for the person....

A: .... the person (laugh) .... but for the system
(pause)

B: Why do you think he ran.... he stole that 21 dollars?

A: I know there's an awful gap, isn't there?

B: Yeah....

A: .... between Friday and Monday.... I was wondering what had happened to him you know and whether it would be a lot easier in fact if you knew.... er what had happened between.... em.... O'Brien taking him to find a job and him going on and stealing.... I don't know whether somebody had sort of taunted him until he couldn't bear it any longer and.... em....

B: Um.... and he wanted to get something.... something for a present for O'Brien or something

A: Yeah.... I hadn't thought of that I must say (laughs)

B: What about his father and him dying young.... perhaps....

A: Yeah....

B: .... he felt a great neg.... neglect of that and.... em....

A: (same time).... Do you think? Well, with O'Brien being the father figure you mean....

B: Yeah it seems to me.... And Georgio he's dead scared of him.... his older brother.... kept beating him
(pause)

A: Yeah, but.... em.... the business of whether he should.... what actually should happen to him and whether he should be punished or.... I don't know well given the love he needs when.... don't you think that he probably needs.... <u>although he needs a lot of love obviously he needs sort of fairly strict em.... sort of clearly defined limits</u> [D] you know sort of.... perhaps that was why he was so interested in religion because you know there is the right and the wrong.... and.... <u>you know he obviously has a great sense of sin and</u> [E]....

B: Um....

A: .... you know he wanted to go and purge himself....

B: He didn't like being.... no.... he didn't like being cooped up at all [F]....

A: No....

B: .... and that cottage.... the discipline cottage....

A: Um.... yeah He was obviously pretty sensitive, and the other boys in the.... that place obviously.... er.... it upset him

B: Um.... he did have moments there....

A: Yeah

B: .... but he wanted to be taken home. He asked to leave the home.... and told the judge he'd be a good boy and....

A: Yeah.... I.... I thought that was quite surprising actually. He actually went.... he was only twelve or something.... he went to the school and asked to be taken back and he went.... somehow.... went to the police station....

B: Yeah.... yeah

A: .... and I thought that was very enterprising of him.... a kid of his age might just have run home to all his....

B: Um.... do you think he had an ulterior for it and....

A: I don't know if he wanted to establish his new identity or something

B: Um.... he never stole for himself either.... it's always for.... well in most of the cases it's for a present for his mum or [G]....

A: Yeah.... 'cos he wanted attention

B: Um

(pause)

A: I mean he was really pretty nasty to other kids.... I mean painting them and....

B: (laughs) yeah....

A: .... his real delight.... he.... he was pretty antisocial

B: It was a vicious circle though 'cos he wanted to be good and because he'd already done something nasty to them they started being nasty back and.... retaliating [H]

A: Yeah.... don't you think.... er.... you know.... in any situation he was.... he'd be put in he needs to be in a fairly small group where....

B: So he doesn't show off....

A: Er.... well.... where he isn't swamped you know he's got some sort of identity [I] .... you know when he was.... in the school he went to when he was with Mrs Baker and he t.... he was put in charge of....

B: Yeah.... another wee kid.... yeah [J]

A: .... another little boy.... .... and he was sort of shaking his head over him and saying 'There's nothing I can do for him' (laughs)

B: Yeah.... he's looking after him in a fatherly way as well though.... he might have missed somebody doing that over him (pause)

A: Yeah I don't know.... d'you think.... I mean, what do you think about the discipline bit.... do you think he needs.... he needs it? [K]

B: Well, it wasn't discipline as such because he was got beaten by his brothers.... and things [L]

A: Yeah.... just thumping him.... and.... well....

B: He seemed to get on a lot better with Mrs Baker and her love and affection and flower pots.... and [M]

A: Yes.... (laughs) (pause) But also somewhere he.... he could be fairly creative or.... he said he wanted to do handwork

B: Yeah.... that was more.... em.... sort of handwork as opposed to academic work....

A: Yes.... something like that

B: .... vocational

A: Well, I.... I think he should definitely be taken away from.... living .... you know being at home 'cos it's.... you know there's nothing.... because it all closed in over him again you know when he went back, didn't it?

B: Um....

A: It's something about.... when he went home he was.... he was outside all the family but gradually they seemed to sort of [N] ....

B: .... pull him in....

A: .... pull him down.... pull him in again....

B: Um.... at the last he'd got this.... he was very ill as well.... he'd got all these boils and things.... perhaps that could have broken down his defences and....
(pause)

B: If he was clean and well-fed he seemed to be a lot happier [O]

A: Yeah, perhaps because it was the impression he made on other people too, you know, the effect that he had sort of back.... (pause).... but I think the worst thing that could ever happen to him was to be ignored, [P] wasn't it.... that seemed to really.... you know when the teacher ignored him in the class....

B: Yeah.... and he didn't get his valentine

A: Yeah.... that's right (laughs)

B: <u>He didn't seem to be interested in girls very much</u> Q

A: No.... he did like it when Mrs Baker kissed him, didn't he? He thought that was....

B: .... yeah

A: obviously wanted affection

B: Um.... I suppose.... what age.... it didn't go up to....

A: I know he was about twelve I think

B: .... um....

A: .... a bit older than that.... fourteen

B: .... yeah.... I suppose he was getting a job at fourteen

A: Um.... hum.... (pause).... if.... he'd been sort of with Mrs Baker in that sort of situation.... and.... uh.... outside doing a job as well and living a normal life perhaps it would have....

B: Yes....

A: .... been better

B: .... um.... what about Mrs Hatfield.... remember.... that was the old dear that gave him his supper....

A: Oh! she was the woman who gave him money for the stuff they'd stolen!

B: Yeah.... that's the woman.... the jewellery.... she said it was brass and not gold

A: Um....

(pause)

A: I don't know (laughs) I think we're more or less agreed

B: There more points to make about it

.... I wonder why he turned to religion like that

A: Um.... I thought that was very interesting.... I thought that.... although he obviously needs a lot of love and affection I think he also needs.... some sort of sense of responsibility.... you know this.... business of sinning.... seemed to really get hold of his imagination didn't it?

B: Um.... I should be surprised at that.... if he's worried about sinning and he's been doing all these things like stealing and beating up other boys....

A: Yeah.... that's.... perhaps.... why.... I mean, it didn't matter to him it would....

B: The thing was.... he's doing it intentionally to.... thwart....

A: Um....

(pause)

B: Then there was that beads or something that he stole from the....

er.... em....

A: .... yeah.... a bracelet or....

B: Um.... he was very worried about being.... of her accusing him that he did steal it

A: Yeah....

B: .... as if he didn't steal it

A: Yes.... and he really wanted to shock her, didn't he

B: Um....

A: And there was that other incident when he.... em.... when he repeatedly put his head round the door of the warden's room [R]....

B: Yeah....

A: .... or something.... and she.... I think she should have said 'Oh! Hello, come in' and then it would have defused the whole situation but he.... she kept chucking him out....

B: Yeah....

A: .... and in the end he sort of.... threw....

B: .... threw himself on the carpet....

A: .... himself on the carpet
(pause)

B: And you know, he really, obviously enjoyed these dramatic scenes....

B: Probably.... he's just wanting attention all the time

A: Um....

B: Still going back to his childhood when there was so many in the family and he....

A: .... yeah....

B: .... hardly got any attention

A: Yeah.... I suppose the temptation is always with that sort of person to ignore them.... you know.... em.... say to them 'Look it doesn't matter to me what you do.... I just don't care about you'.... and I think....

B: Um....

A: .... that's what I would do

B: The fact that....

A: If.... if a child's really.... em.... really sort of misbehaving and you can't see any reason for it except that he's demanding attention... I.... I would think it's always a temptation to turn off.... and....

B: Yeah....

A: .... because.... I suppose that is wrong really....

B: Perhaps that's why he started talking to himself as well....

A: .... um....

B: mentions he was talking to himself

A: Um.... no other person would listen (laughs)

B: Um.... um

(pause)

A: (mumble) You never know though.... what do you think should happen to him? I think we already have decided, haven't we?

B: Yeah.... I suppose they'd find out more why.... on Sunday what's happened.... to him [S]

A: Yeah.... yeah

B: .... the Saturday or Monday or whatever it was.... (pause) But as he gets older it's going to get difficult.... to put him in.... in Mrs Baker situation again

A: Yes.... so perhaps sort of.... you know sort of a half-way house that he was.... in.... He also needs some sort of stable home.... em.... base I mean.... just to send him out and.... and find somewhere to live on his own.... could be pretty difficult....

B: Yeah....

A: He needs.... some sort of stable base [T]

B: .... He's always after the mother figure too....

A: Yeah....

B: .... it's his mother that he doted on

A: Yes.... yes and she just turned off completely didn't she.... I mean you can't blame her with all the kids and....

B: And his brother having the illness as well and getting all the extra attention

A: Yes.... that came out again and again didn't it.... that.... he was obviously very bitter about it.... whether.... that was a real situation or not he obviously felt.... repeatedly ignored and....

B: Um....

A: .... You know.... whether that was a true situation or whether that was the way.... he felt.... one wouldn't know

The following examples were selected for judgment: (see Appendix 5)

(1) Referents related to each other and to the theme:
C, D, L, M and N

(2) One of the relations is implicit:
B, I, K, O and S

(3) Referents related to theme indirectly:
E, F, H, P and T

(4) Referents are difficult to relate:

A, G, J, Q and R

2.5.3. Results and discussion

I shall summarize my impressions about the way the interaction was affected by the instructions to be irrelevant. It seems that the subject who was asked to be irrelevant was afraid of doing so, and consequently she was irrelevant in a subtle way. She talked about Johnny Rocco but most of the time what she said had hardly anything to do with what should be done with him. Sometimes the other girl also seemed to be carried away with her and became irrelevant too.

Next data concerning reliability of intersubjective agreement are presented. The two sets of judgments for each of the interlocutors were correlated as a measure of test-retest reliability, their scores were then averaged and intercorrelated to check the agreement between them, and finally the averaged scores for each of them were correlated with the averages of the group of judges. The correlations are presented in Table 1.

Table 1

Test retest reliabilities for interlocutors and correlations between them and the group of judges

Variables correlated	r	p
Speaker A - Session 1 x Session 2	0.63	< .01
Speaker B - Session 1 x Session 2	0.648	< .01
Speaker A x Speaker B (averages)	0.491	< .05
Speaker A x Group (averages)	0.511	< .05
Speaker B x Group (averages)	0.288	n s

The results for the transformed scores are reported for this experiment since the transformation did make a difference in this experiment. They are presented in Table 1a.

Table 1a

Test-retest reliabilities for interlocutors and correlations between them and the group of judges calculated on transformed scores

Variables	r	p
Speaker A - Session 1 x Session 2	0.5925	< .01
Speaker B - Session 1 x Session 2	0.6974	< .001
Speaker A x Speaker B (averages)	0.4889	< .05
Speaker A x Group (averages)	0.5228	< .05
Speaker B x Group (averages)	0.3448	ns

From Tables 1 and 1a we see that all correlations are positive, and that most of them are significant. However, the correlations are not as high as those found in the previous experiment and the correlation between the judgments of the subject who was asked to be irrelevant and the averages of the group is non-significant. Contrary to expectation the data seem to be less clear than in the previous experiment.

The same thing happened when the differences among the different categories of utterances were analysed. The Quasi-F ratio for the raw scores was non-significant ($F'' = 2.94$ df = 3, 19), though it approached significance. The quasi F ratio for the transformed scores was significant at the 5% level ($F'' = 3.2285^*$, df = 3, 19). The raw score means of the different types of utterance and the corresponding means for the transformed scores are presented in Table 2. Tests of significance for the differences among means are presented only for the transformed scores.

Table 2

Raw-score and transformed means for different types of utterance and significance of differences among transformed means

	1	2	3	4
Means (Raw scores)	7.6558	6.8964	6.9898	5.1702
Means (Transformed scores)	0.3698	0.12506	0.1478	-0.5707
1	-	0.2447(*)	0.2220	0.93686**
2	-	-	-0.02274	0.69566**
3	-	-	-	0.7184**
4	-	-	-	-

Inspection of Table 2 shows that the direction of means 2 and 3 is opposite to the prediction made. The differences among means 1, 2, 3 and 4 are significant at the 1% level by a Tukey test; the differences between means 1 and 2 can be declared significant only if we use a more powerful t-test (t = 2.447, df = 57).

To summarize, in this experiment only the analysis of transformed score is significant, and except for the reversal in the order of means 2 and 3 the data are consistent with the hypothesis. The results of this experiment are weaker than the results of the previous experiment in that the previous experiment yielded identical results for the raw and transformed scores, and all of the means were in the predicted direction. In both cases the difference between means 1 and 2 requires a powerful test to detect, and the difference between means 2 and 3 is not significant, but here it is also in the opposite direction. This reversal may mean that the predicted

relation between cases where the relation among referents is implicit and those in which referents are related indirectly may hold only if the chain linking the referents is long, and one will have to see how the relation varies as a function of the length of the chain.

How can these differences between the studies be accounted for? If we further inspect the data of both experiments we find that in both of them there were significant differences among the examples in each category for both raw and transformed scores. The data for the raw and transformed scores of the previous experiment are respectively: $F = 2.6851$; $df = 16,304$, $p < 0.1$; and $F = 2.3004$; $df = 16, 304$; $p < .01$. The F ratios for the present experiment are: $F = 8.5224$; $df = 16, 304$; $p < .01$ and $F = 8.0295$; $df = 16\ 304$; $p < .01$. We see that in both these cases there was variability due to choice of examples. Moreover, whereas in the first experiment the agreement among subjects' judgments was very high, it was not as high in the present experiment. The correlations in Tables 1 and 1a demonstrated this point, and it also appears from the analysis of variance. In the previous experiment the subject factor was not significant both for the raw and transformed scores; the F ratios were of 1.1272 and 0.3603 respectively with 19 and 304 degrees of freedom. But in the present experiment F (subjects) = 4.7691; $df = 19, 304$; $p < .01$ for the raw scores; the transformation eliminates these differences (F (subjects) = 0.091), and perhaps that is why the overall analysis is significant for these scores and non-significant for the raw data.

The next question will then be what could account for the differences among subjects in this experiment. A possible explanation is the fact that subjects were paid in this experiment whereas in the previous one they were not, and therefore a wider range of subjects may have been included in the sample. Another possible explanation is that examples were far less clear this time. I found it very difficult to choose the examples because of the fragmented nature of the interaction, and the relatively lower reliabilities for this experiment support this claim. The hypothesis assumes also that one rule is broken at a time, and this may not be the case in some of the examples in this experiment, and the stimuli may be more ambiguous consequently. Another possible explanation is that the theme creates more ego-involvement in this experiment than in the previous one, and this factor would tend to increase the error of confounding relevance and the extent to which subjects <u>agree</u> with what is said, and this might tend to increase

individual differences,

The comments of the subjects tend to support some of these interpretations and they are presented below classified according to the type of utterance to which they were made.

List of comments made by subjects

(1) Referents related to each other and to the theme:

Utterance	Comment
C	- It would have to be a change of some kind.
D	- What sort of limits?
	- It takes a long time for them to come to the point.
	- Pretty vague.
L	- As such?
	- Corporal punishment was probably the last thing he needed, some incentive for good behaviour would be preferable.
	- At least this was some form of attention.
	- Different interpretation of discipline needed.

(2) Implicit relation among referents

Utterance	Comment
B	- Not only his background, but his own in-built personality must have had something to do with it.
	- Obvious statement which doesn't help at all.
I	- More relevant to general argument than to immediate context (B's question) (This is my paraphrase of speaker A's comment).
K	- He needs affection more.
	- Again what sort of disciplinary 'limits' must be put on him?
	- Relevant to decision what to do with him.

(3) Referents related indirectly

Utterance	Comment
E	- Did he? If he did, why then, keep on stealing?
	- Highly relevant to general question but not to immediate context (Speaker A's comment, my paraphrase).
F	- Being cooped up wouldn't matter so long as he had affection. It was just an extra instance.
H	- He had this sense of good and evil, and when the good part was frustrated (?)
	- Wasn't it society who had 'kicked him in the teeth' and not him upsetting it?
P	- Not very practical.

(4) Referents unrelated

Utterance	Comment
G	- Relevant point.
	- (ranked it 8) if true.
	- Not relevant as to what should happen to him.
J	- More relevant to general argument than to B's immediate question.

(5) General comments

	Comments
(1)	Generally, all statements that were made were of considerable importance and around 70-80% of them should have been taken into consideration when deciding the fate of the boy.
(2)	The need for freedom keeps cropping up and I feel it is one important factor in his behaviour.
(3)	Being shut out is as bad as being shut in.

To conclude, the results reported so far lend some support to the hypothesis that relevance is judged high when a referent in a text is explicitly related to both the theme and to other referents in the text, it decreases when either the relation is implicit or indirect; there is ambiguity as to whether the fact that an implicit or indirect relation causes more irrelevance; when it is difficult to find a way of relating the referents judgments of relevance tend to be lowest of all.

The experiments reported so far have not demonstrated that the dimensions of meaning affect judgments of relevance, and from the model outlined earlier we can derive at least a weak prediction that such effects should exist. The third experiment was designed to study this problem.

2.6. Experiment 3: The effects on judgments of relevance of changing the referent, dimension and value

2.6.1. Introduction

One can conceptualize the structure of the text as consisting of elements that remain constant and elements that change; the theme is constant but the referents, dimensions and values can change. (The terms 'referent', 'dimension', and 'value' have been defined in 2.3. and discussed more fully in 1.4.1.2.3.). The question is then, will the number of elements one changes when one moves from one utterance to another affect the relevance of the continuation, will the effect depend on the nature of the element itself, and to what extent does it matter whether it is the same speaker who is making the second utterance or another one? The present study attempts to answer these questions.

2.6.2. Method

2.6.2.1. Subjects:

One hundred and sixty eight undergraduate psychology students took part in the study, most of them first year students. Fifty six subjects answered each type of questionnaire.

2.6.2.2. Procedure:

The experiment was run in the form of a questionnaire. There were three questionnaires each on a different theme. The themes were the same as those used in the previous experiments:

Should Britain stay in the Common Market?
Do universities fulfil their function?
and What should be done about Johnny Rocco?

Each utterance in a discussion can be analysed in terms of its referent, or what it is about, its dimension, or the aspect of the referent covered by the communication, and its value, or the thing said about the referent on the given dimension. When one adds a second utterance to the text each of these factors can remain the same or it may change. According to this analysis there will be eight ways for continuing each utterance in which the variables of referent, dimension and value assume the following states: (1) same, same, same; (2) same, same, different; (3) same, different, same; (4) same, different, different; (5) different, same, same; (6) different, same, different; (7) different, different, same; (8) different, different, different.

Four utterances were selected from each of the transcriptions presented earlier, including as wide a variety of referents and dimensions as possible. For each of the utterances selected, eight ways ('variants') of continuing it were written with the above underlying structure. Each questionnaire consisted of four utterances from the text with eight ways of continuing each example. The order of presentation of the variants was randomized and all the permutations were used when the examples with their variants were assembled as a questionnaire.

Subjects rated the relevance of the variants as continuations to the utterance on a 10 point scale; the direction of the scale was reversed for half of the questions for each subject; in order to determine whether change of speaker affected the judgment, half of the subjects who answered the questionnaires relating to each of the themes were told to imagine that the variant was spoken by the same speaker and half were told to imagine that it was spoken by a different speaker. All the questionnaire items used in this experiment, together with the instructions given to subjects are presented in Appendix 7a. Oral instructions were given to subjects in addition to the typed ones to emphasize that they were to judge how relevant

each of the variants would be if it followed the example from the transcript (rather than the overall discussion). (See Appendix 7).

2.6.3. Results and discussion

An analysis of variance was carried out to determine whether there were differences in rating the different variants (6). The data were analysed separately for each theme since many more themes would be needed if one wanted to include them as a random factor in the analysis of the experiment. The examples from the text were also treated as a fixed factor as it would be impossible to test the variants if the examples were assumed to be random. The analyses are presented in Tables 1 and 2 and 3; the results for utterances from the CM debate are presented in Table 1, the results for the debate about universities are presented in Table 2 and the results of the debate about Johnny Rocco's case in Table 3.

Table 1

Analysis of variance of ratings of the different variants CM debate

Source	SS	Df	MS	Error term	F	Estimates of variance components
(1) Position in turn (I)	0.848723	1	0.848723	N(I)	0.0435	-0.02082
(2) Example (J)	42.31863	3	14.10621	NJ(I)	1.4357	0.009556
(3) Variant (V)	3135.552	7	447.936	NV(I)	25.1341**	1.9201
(4) Ss (N(I))	1053.484	54	19.50896	-	-	0.6096
(5) IJ	3.1534	3	1.0511	NJ(I)	0.107	-0.03916
(6) IV	250.4119	7	35.77312	NV(I)	2.0073	0.1602
(7) JV	1343.514	21	63.9768	NJV(I)	6.5639**	0.9683
(8) NJ(I)	1591.668	162	9.825113	-	-	1.2281
(9) NV(I)	6736.66	378	17.82184	-	-	4.4554
(10) IJV	688.7471	21	32.7974	NJV(I)	3.365**	0.8232
(11) NJV(I)	11052.85	1134	9.74678	-	-	9.7467

From this table we see that there were significant effects for variants and for the interactions of variants with examples and variants

with position and example. If we look at the estimates of the variance components for these factors, we see that the variance due to the variants factor is roughly twice as large as that for significant interactions. However, inspection of the variance estimates shows also that there were probably huge interactions of subjects and variants (row 9) and of subjects, examples, and variants (row 11) and in fact if we estimate ω^2 for the significant factors (a measure of the strength of association between the independent and dependent variable), we find that for the variants ω^2=0.1161, for the interaction of example and variant ω^2= 0.04395, and for the IJV interaction ω^2= 0.018. That means that the variant factor accounts for about 11% of the variation in the dependent variable and that its significant interactions add about 4% and 2% respectively. The estimates of variance for the interactions of subjects and example, subjects and variant, and subject example and variant indicate that very strong biases towards different contents must operate in the subjects. The choice of the example entails a choice of a referent, a dimension, and a value. It seems that we shall have to know much more about the interrelations among different referents and dimensions before we can attempt to interpret such interactions with people, as found here, for we need a fairly refined classification of referents in order to understand to which of them people react differently.

Let us examine to what extent this pattern remains consistent in the other two themes explored. First, the analysis for the debate on universities will be presented.

Table 2

Analysis of variance for differences among variants - university (The error terms are not presented since they are the same as in the previous Table)

Source	SS	Df	MS	F	Estimates of variance components
(1) Position in turn (I)	2.1450	1	2.1450	0.0813	-0.027
(2) Example (J)	171.4397	3	57.14658	6.044**	0.1064
(3) Variant (V)	2561.132	7	365.8757	46.5975**	1.5983
(4) Ss (N(I))	1424.204	54	26.3741	-	0.8241
(5) IJ	15.6183	3	5.2061	0.5506	-0.0189

Table 2 continued:

Source	SS	Df	MS	F	Estimates of variance components
(6) IV	93.878	7	13.4011	1.7068	0.049
(7) JV	1128.572	21	53.7415	8.4544**	0.8461
(8) NJ(I)	1531.736	162	9.4551	-	1.1818
(9) NV(I)	2967.988	378	7.8518	-	1.9629
(10) IJV	266.145	21	12.6735	1.9937**	0.2256
(11) NJV(I)	7208.453	1134	6.35666	-	6.35666

Here we find a significant variant factor (row 3), a significant interaction of variant with example (row 7), and of position with example and variant (row 10). The example factor (row 2), which was not significant in the previous experiment, is significant here. How strong is the relation between the dependent variable and each of the significant factors? The estimate of ω^2 for the example factor is 0.008; for the variants $\omega^2 = 0.144$, for the JV interaction $\omega^2 = 0.057$, and for the IJV interaction $\omega^2 = 0.007$. That means that knowing the example will reduce our uncertainty about the dependent variable by less than 1%, knowing the variant by about 14%, knowing its interaction with example will add almost 6%, but knowing the position adds less than 1%. Inspecting the estimates of variance reveals again that strong interactions (11, 9, 8) exist with subjects and examples.

So far the pattern of results remains consistent across two themes. The results for the third theme are presented next.

Table 3

Analysis of variance for differences among variants, discussion of Johnny Rocco

Source	SS	Df	MS	F	Estimates of variance components
(1) Position in turn (I)	57.14285	1	57.14285	5.3639*	0.0588

Table 3 continued:

Source	SS	Df	MS	F	Estimates of variance components
(2) Example (J)	58.16293	3	19.38763	2.4113	0.02532
(3) Variant (V)	5203.742	7	743.3916	101.731**	3.286089
(4) Ss (N(I))	575.2698	54	10.65314	-	0.3329
(5) IJ	48.2991	3	16.0997	2.0024	0.03597
(6) IV	210.9102	7	30.13002	4.1232**	0.2037
(7) JV	2504.055	21	119.2407	21.2882**	2.0292
(8) NJ(I)	1302.534	162	8.04033	-	1.0050
(9) NV(I)	2762	378	7.307425	-	1.8268
(10) IJV	138.0249	21	6.5726	1.1734	0.0346
(11) NJV(I)	6351.836	1134	5.601266	-	5.6012

From this table we see that the factor of position in turn is significant in this theme (1), the variant factor (3), and two interactions, that of position and variant (6) and the example x variant (7). The estimated strength of association of each of these variables with the dependent variable are as follows: position $\omega^2 = 0.024$; variants $\omega^2 = 0.268$; position in turn x variant $\omega^2 = 0.008$; example x variant $\omega^2 = 0.264$. This means that knowledge of position will decrease our uncertainty about the dependent variable by about 2.5%, knowledge of the variant by about 27% knowledge about the interaction of variant x position in turn will decrease the uncertainty by less than 1%, and knowledge of the interaction of example x variant will decrease it by another 27%. From the estimates of the variance components we see that there was also a very strong interaction of subject x example x variant (11).

It seems, therefore, that there are differences among variants, and that these differences are stable across the themes studied here. The variants account for 11 to 27% of the variation in judgments of relevance, and another substantial portion of the variation is accounted for by the interactions with a specific choice of examples and particular subject. As was said earlier, we need more knowledge about the interrelations among

referents before we can attempt to interpret such interactions.

Bearing in mind that differences among variants account for a portion of the total variance only, we can further investigate the differences among them. One of the goals of this analysis was to see whether the number of elements changed in the different variants made a difference in the judgments of their relevance. For that purpose the mean judgments of the variants will be presented for each theme together with the differences among them, and tests of significance of the differences among means grouped according to the number of elements changed.

Table 4

(a) CM: Mean judgments of variants, differences among means and Scheffe tests for means grouped according to number of elements changed

Variants	1	2	3	4	5	6	7	8
Means:	4.66964	6.81696	6.72321	5.39286	7.32589	4.10714	5.86161	3.33928
Dif:								
1	-							
2	-2.1473**	-						
3	-2.0536**	0.0937	-					
4	-0.7232	1.4241**	1.3304*	-				
5	-2.6562**	-0.5089	-0.6026	-1.933**	-			
6	0.526	2.7098**	2.6161**	1.2857*	3.2187**	-		
7	-1.192	0.9553	0.8616	-0.4688	1.4642**	-1.7545*	-	
8	1.3304**	3.4777**	3.384**	2.0536**	3.9866**	0.7679	2.5224**	-

* $p < .05$: Tukey's test

** $p < .01$: Tukey's test

(b)

Means compared	F
2, 3, 5 vs 1	21.74**
2, 3, 5 vs 4, 6, 7	35.5581**
4, 6, 7 vs 8	16.94*
4, 6, 7 vs 1	4.28

*p < .05 Scheffe

**p < .01 Scheffe

Note: Bigger mean(s) always written first in list of means compared (b)

The results in this table indicate that changing one element at a time produces the highest relative relevance (means 2, 3, 5), changing two elements (means 4, 6, 7) tends to reduce relevance (2, 3, 5 vs 4, 6, 7), repetition (1) tends to reduce it even further, but the difference does not reach significance (4, 6, 7 vs 1), and changing three elements at a time (8) produces the lowest judgments of relevance (1 vs 8). Which element produces the most relevant variant when changed? The means show that variant 5, the one involving change of referent gets the highest rating on the average, next comes variant 2, which involves change of value, and third comes the variant involving change of dimension. However, from the table we also learn that none of the differences among any pair of these means is significant. We shall return to the question of effects of referent, dimension, and value later on. Before that the data for the other two themes have to be presented, to determine the extent to which these findings are stable across themes.

Table 5

(a) University: mean judgments of variants, differences among means and Scheffe tests for means grouped according to number of elements changed

Variants	1	2	3	4	5	6	7	8
Means:	6.49553	7.0000	6.21875	4.68203	5.31696	4.73661	4.99107	2.95982
Dif:								
1	-							
2	-0.5044	-						
3	0.2767	0.7812	-					
4	1.8125**	2.3169**	1.5357**	-				
5	1.1785**	1.683**	0.9017*	-0.6339	-			
6	1.7589**	2.2633**	1.4821**	-0.0535	0.5803	-		
7	1.5044**	2.0089**	1.2276**	-0.308	0.3258	-0.2544	-	
8	3.557**	4.0401**	3.2589**	1.7232**	2.3571**	1.7767**	2.0312**	-

* $p < .05$: Tukey's test

** $p < .01$: Tukey's test

(b)

Means compared	F
1 vs 2, 3, 5	6.48
2, 3, 5 vs 4, 6, 7	58.85**
4, 6, 7 vs 8	39.45**
1 vs 4, 6, 7	36.201**

* $p < .05$ Scheffe

** $p < .01$ Scheffe

Note: The bigger of means compared has been written first in (b)

From this analysis it emerges that repetition produces the highest relative relevance (2, 3, 5 vs 1 and 2, 3, 5 vs 4, 6, 7), changing one element seems to come next (2, 3, 5 vs 1 and 1 vs 4, 6, 7), although the difference between repetitions and variants in which one element was changed is non-significant (2, 3, 5 vs 1); next come variants in which two of the elements have been changed (2, 3, 5 vs 4, 6, 7) and eventually cases where three elements are changed at once (4, 6, 7 vs 8). Means 4, 6, 7 and 1 have exchanged their relative positions in this experiment as compared with the experiment where the CM was the theme. Which element produces most relevant judgments when changed? Variant 2 involving changes in value has the highest mean, the next highest is variant 3, which involves change in dimension, and finally variant 5, changing the referent. Here comparison 2 vs 5 and 3 vs 5 are significant. Thus it appears that the best element to change is the value, next is the dimension, and last the referent.

Table 6

(a) J-R: Mean judgments of variants, differences among means, and Scheffe tests for means grouped according to number of elements changed

Variants	1	2	3	4	5	6	7	8
Means:	7.02678	5.55803	7.66518	3.80357	7.03571	3.16964	6.68303	3.45982
Dif:								
1	-							
2	1.47**	-						
3	-0.64	-2.11**	-					
4	3.22**	1.75**	3.86**	-				
5	-0.01	-1.48**	0.6295	-3.25**	-			
6	3.86**	2.39**	4.49**	0.6339	3.86**	-		
7	0.34	-1.13**	0.9822**	-2.87**	0.3527	-3.51**	-	
8	3.57**	2.1**	4.20**	0.343	3.57**	-0.2902	3.22**	-

* $p < .05$: Tukey's test

** $p < .01$: Tukey's test

(b)

Means compared	F
1, vs 2, 3, 5	7.00
2, 3, 5 vs 4, 6, 7	110**
4, 6, 7 vs 8	27.25**
1 vs 4, 6, 7	61.91**

* p <.05 Scheffe

** p <.01 Scheffe

Note: The first mean in each pair compared is the bigger in (b)

From this analysis it is clear that the mean rating for repetitions is higher than the mean judgments when one element is changed (1, vs 2, 3, 5), but the difference between them is not significant. Changing two elements produces lower relevance than either repetition or change of one element (2, 3, 5 vs 4, 6, 7 and 1 vs 4, 6, 7) and changing three elements produces the lowest ratings of relevance (4, 6, 7 vs 8). Of the three variants involving change of one element, variant 3, involving change of dimension, gets the highest relevance rating, next is variant 5, involving change of referent, and last comes variant 2, changing the value. Of these comparisons 2 vs 3 and 2 vs 5 are significant.

Is there any consistency across the different themes? The mean of 2, 3, 5 is higher than that of 4, 6, 7 and that of 4, 6, 7 is always higher than 8; this means that changing one element always results in higher relevance than changing two and changing two elements is better than changing three. Repetitions seem to vary their relative position, sometimes they are judged to be highly relevant and sometimes as irrelevant. Intuitively one can understand why that is so; in normal speech repetitions occur very frequently - as the transcriptions presented earlier demonstrate; some of them are just ignored and some may have the function of expressing agreement, of insisting on a point, etc., and therefore, their relevance will vary. On the whole, the number of elements changed affects judgment of relevance, with maximal relevance being produced by changing one element at a time. One cannot tell which element is the best one to change as there seems to be an interaction with the theme here.

The main goal of this experiment was to see whether there were effects of referent, dimension and value affecting judgment of relevance. There are several possible ways of analysing the data in order to answer this question. One way is to combine all the data of the three themes and see whether such effects exist. The shortcoming of this method is that the error term for testing these effects is their interaction with the factor of position in turn, and since both factors have a small number of degrees of freedom, we get a very small number of degrees of freedom for testing these effects, and thus this analysis does not provide a powerful test of the main effects. Another way is to break up the data according to theme, as has been done earlier. There are two possibilities for carrying out such an analysis: one can treat the examples in each theme as a random factor or one can treat them as fixed and generalize only effects that are consistent across different examples in different themes. As we already know, the examples interacted with other factors and since there were only four examples in each theme, there is little chance of finding significant effects if we treat the examples as random. The data have been analysed in all ways; the analysis with each theme analysed separately and examples treated as fixed will be discussed in detail, and the other two analyses will be presented in Appendix 8. The analyses for the three themes are first presented and then discussed.

Table 7

CM: Analysis of variance for effects of referent, dimension and value

Source	SS	Df	MS	F	Estimate of variance component
(1) Position in turn (I)	0.8487723	1	0.8487723	0.0435	-0.02082
(2) Example (J)	42.3186	3	14.1062	1.4357	0.00956
(3) Referent (K)	246.7773	1	246.7773	9.6196**	0.2467
(4) Dimension (L)	71.9202	1	71.9202	6.3686*	0.0676
(5) Value (M)	678.9111	1	678.9111	27.8777**	0.7305
(6) Ss (N(I))	1053.484	54	19.5089	-	0.6096
(7) Position x Example	3.1534	3	1.0511	0.107	-0.03916
(8) Position x Referent	1.5675	1	1.5675	0.0611	-0.05376

Table 7 continued:

Source	SS	Df	MS	F	Estimate of variance components
(9) Example x Referent	483.7778	3	161.2593	14.2566**	0.6694
(10) Position x Dimension	21.6568	1	21.6568	1.9177	0.02313
(11) Example x Dimension	133.9124	3	44.6374	4.6808**	0.1567
(12) Referent x Dimension	229.2861	1	229.2861	16.6066**	0.4809
(13) Position x Value	23.9111	1	23.9111	0.9818	-0.009866
(14) Example x Value	280.9919	3	93.6639	7.3358**	0.3611
(15) Referent x Value	1204.219	1	1204.219	40.3036**	2.6212
(16) Dimension x Value	216.5896	1	216.5896	23.2666**	0.4616
(17) Ss x Example	1591.668	162	9.825113	-	1.2281
(18) Ss x Referent	1385.299	54	25.6536	-	1.6033
(19) Ss x Dimension	609.8181	54	11.2929	-	0.7058
(20) Ss x Value	1315.07	54	24.35315	-	1.522
(21) Position x Example x Referent	135.0219	3	45.0043	3.9787**	0.3008
(22) Position x Example x Dimension	65.7915	3	21.9305	2.2997	0.1106
(23) Position x Referent x Dimension	0.7637	1	0.7637	0.0553	-0.0582
(24) Example x Referent x Dimension	76.8572	3	25.619	2.9882*	0.1521
(25) Position x Example x Value	261.1228	3	87.0409	6.8171**	0.6631
(26) Position x Referent x Value	143.4419	1	143.4419	4.8008*	0.5069
(27) Example x Referent x Value	158.9226	3	52.9742	5.4625**	0.3863

Table 7 continued:

Source	SS	Df	MS	F	Estimate of varianee components
(28) Position x Dimension x Value	41.5896	1	41.5896	4.4677*	0.1341
(29) Example x Dimension x Value	109.168	3	36.3893	4.0496**	0.2446
(30) Referent x Dimension x Value	487.8484	1	487.8484	46.6479**	2.1312
(31) Ss x Referent x Example	1832.414	162	11.3112	-	2.8278
(32) Ss x Example x Dimension	1544.863	162	9.5361	-	2.384
(33) Ss x Referent x Dimension	745.5754	54	13.8064	-	1.7258
(34) Ss x Example x Value	2068.416	162	12.768	-	3.1919
(35) Ss x Referent x Value	1613.451	54	29.8787	-	3.7348
(36) Ss x Dimension x Value	502.688	54	9.309	-	1.163
(37) IJKL	63.0116	3	21.0038	2.4494	0.2219
(38) IJKM	92.021	3	30.673	3.1629*	0.3745
(39) IJLM	31.5068	3	10.5022	1.1688	0.03707
(40) IKLM	17.4807	1	17.4807	1.6715	0.0627
(41) JKLM	99.8823	3	33.2941	4.5269**	0.4632
(42) NJKL(I)	1388.89	162	8.5733	-	4.28
(43) NJKM(I)	1571.054	162	9.6978	-	4.8489
(44) NJLM(I)	1455.703	162	8.9858	-	4.4929
(45) NKLM(I)	564.7378	54	10.4581		2.6145
(46) IJKLM	40.27197	3	13.42399	1.8252	0.2167
(47) NKJLM(I)	1191.476	162	7.3547		7.3547

Table 8

University: Analysis of variance for effects of referent, dimension and value

Source	SS	Df	MS	F	Estimate of variance components
(1) Position in turn (I)	2.145	1	2.145	0.0813	-0.02704
(2) Example (J)	171.4397	3	57.1465	6.044**	0.1064
(3) Referent (K)	1144.321	1	1144.321	66.2215**	1.2578
(4) Dimension (L)	617.5803	1	617.5803	163.8797**	0.685
(5) Value (M)	371.5713	1	371.5713	40.0469**	0.4043
(6) Ss (N(I))	1424.204	54	26.3741	-	-0.82416
(7) Position x Example	15.6183	3	5.2061	0.5506	-0.01896
(8) Position x Referent	6.0356	1	6.0356	0.3493	-0.02509
(9) Example x Referent	305.04	3	101.68	9.7594**	0.4074
(10) Position x Dimension	1.2854	1	1.2854	0.3411	-0.0055
(11) Example x Dimension	340.4685	3	113.4895	28.8603**	0.4890
(12) Referent x Dimension	6.7521	1	6.7521	1.2322	0.0028
(13) Position x Value	27.0087	1	27.0087	2.9109	0.0395
(14) Example x Value	84.9863	3	28.3287	3.2608*	0.0876
(15) Referent x Value	69.9309	1	69.9309	6.9556*	0.1336
(16) Dimension x Value	341.2522	1	341.2522	52.2053**	0.7471
(17) Ss x Example	1531.736	162	9.4551	-	1.1818
(18) Ss x Referent	933.1311	54	17.2802	-	1.08
(19) Ss x Dimension	203.4988	54	3.7684	-	0.2355

Table 8 continued:

Source	SS	Df	MS	F	Estimate of variance components
(20) Ss x Value	501.0334	54	9.2783	-	0.5798
(21) Position x Example x Referent	78.07397	3	26.0246	2.4979	0.1393
(22) Position x Example x Dimension	22.6909	3	7.5636	1.9234	0.0324
(23) Position x Referent x Dimension	0.05615	1	0.0561	0.0102	-0.0242
(24) Example x Referent x Dimension	48.1079	3	16.0359	3.7348*	0.1048
(25) Position x Example x Value	29.0479	3	9.6826	1.1145	0.0088
(26) Position x Referent x Value	53.6274	1	53.6274	5.334*	0.1945
(27) Example x Referent x Value	20.1525	3	6.7175	0.8402	-0.0114
(28) Position x Dimension x Value	5.3598	1	5.3598	0.82	-0.0052
(29) Example x Dimension x Value	66.8759	3	22.2919	4.4335**	0.1541
(30) Referent x Dimension x Value	9.7233	1	9.72338	3.7906	0.0319
(31) Ss x Example x Referent	1687.828	162	10.4186	-	2.6046
(32) Ss x Example x Dimension	637.0444	162	3.9323	-	0.983
(33) Ss x Referent x Dimension	295.9084	54	5.4797	-	0.6849
(34) Ss x Example x Value	1407.411	162	8.6877	-	2.1719
(35) Ss x Referent x Value	542.9094	54	10.0538	-	1.2567
(36) Ss x Dimension x Value	352.9839	54	6.5367	-	0.8170
(37) IJKL	27.53125	3	9.177	2.1374	0.0872

Table 8 continued:

Source	SS	Df	MS	F	Estimate of variance components
(38) IJKM	49.9342	3	16.6447	2.0819	0.1544
(39) IJLM	25.8182	3	8.606	1.7116	0.0638
(40) IKLM	0.4345	1	0.4345	0.694	-0.019
(41) JKLM	262.9409	3	87.6469	21.1662**	1.4911
(42) NJKL(I)	695.5742	162	4.2936		2.1468
(43) NJKM(I)	1295.175	162	7.9949		3.9974
(44) NJLM(I)	814.5454	162	5.028		2.514
(45) NKLM(I)	138.5166	54	2.5651		0.6412
(46) IJKLM	33.0481	3	11.016	2.6603	0.2455
(47) NJKLM(I)	670.8259	162	4.1409		4.1409

Table 9

J-R: Analysis for differences among referents, dimension and values

Source	SS	Df	MS	F	Estimate of variance components
(1) Position in turn (I)	57.1428	1	57.14285	5.3639*	0.05188
(2) Example (J)	58.1629	3	19.3876	2.4113	0.02532
(3) Referent (K)	348.4307	1	384.4307	56.188**	0.4214
(4) Dimension (L)	38.9828	1	38.8928	11.2753**	0.0395
(5) Value (M)	4318.93	1	4318.93	290.7893*	4.8036
(6) Ss (N(I))	575.2698	54	10.6531	-	0.3329
(7) Position x Example	48.2991	3	16.0997	2.0024	0.03597
(8) Position x Referent	1.2856	1	1.2856	0.1879	-0.0124

Table 9 continued:

Source	SS	Df	MS	F	Estimate of variance components
(9) Example x Referent	235.5469	3	78.5156	13.1064**	0.3237
(10) Position x Dimension	76.3951	1	76.3951	22.1474**	0.1628
(11) Example x Dimension	85.2901	3	28.43	7.7325**	0.1105
(12) Referent x Dimension	31.0802	1	31.0802	7.8404**	0.0605
(13) Position x Value	104.1367	1	104.1367	7.0114*	0.1992
(14) Example x Value	576.1094	3	192.0365	21.0352**	0.8165
(15) Referent x Value	86.621	1	86.621	7.8631**	0.1687
(16) Dimension x Value	85.7460	1	85.7460	13.6491**	0.1773
(17) Ss x Example	1302.534	162	8.04033	-	1.005
(18) Ss x Referent	369.4604	54	6.8418	-	0.4276
(19) Ss x Dimension	186.267	54	3.4493	-	0.2155
(20) Ss x Value	802.031	54	14.8524	-	0.9282
(21) Position x Example x Referent	8.5214	3	2.8404	0.4742	-0.0281
(22) Position x Example x Dimension	8.8856	3	2.9618	0.8056	-0.0063
(23) Position x Referent x Dimension	14.6449	1	14.6449	3.6944	0.4768
(24) Example x Referent x Dimension	330.5745	3	110.1915	23.0345**	0.9411
(25) Position x Example x Value	58.1225	3	19.3741	2.1222	0.0914
(26) Position x Referent x Value	0.2299	1	0.2299	0.0209	-0.0481
(27) Example x Referent x Value	345.6523	3	115.2174	22.5425**	0.983
(28) Position x Dimension x Value	5.3627	1	5.3627	0.8537	-0.0041

Table 9 continued:

Source	SS	Df	MS	F	Estimate of variance components
(29) Example x Dimension x Value	399.198	3	133.066	25.3905**	1.1412
(30) Referent x Dimension x Value	258.0369	1	258.0369	54.3708**	1.1207
(31) Ss x Example x Referent	970.479	162	5.9906		1.4976
(32) Ss x Example x Dimension	595.6265	162	3.6767		0.9191
(33) Ss x Referent x Dimension	214.0629	54	3.9641		0.4955
(34) Ss x Example x Value	1478.941	162	9.1292		2.2823
(35) Ss x Referent x Value	594.8716	54	11.0161		1.377
(36) Ss x Dimension x Value	339.2366	54	6.2821		0.7852
(37) IJKL	12.5376	3	4.1791	0.8736	-0.0107
(38) IJKM	16.6191	3	5.5397	1.0839	0.0076
(39) IJLM	3.9929	3	1.3309	0.254	-0.0698
(40) IKLM	8.8547	1	8.8547	1.8658	0.03668
(41) JKLM	531.6833	3	177.2278	33.5891**	3.0705
(42) NJKL(I)	774.9678	162	4.7837		2.3918
(43) NJKM(I)	827.9995	162	5.1111		2.5555
(44) NJLM(I)	849.0054	162	5.2407		2.6203
(45) NKLM(I)	256.2771	54	4.7458		1.1864
(46) IJKLM	29.3454	3	9.7818	1.8539	0.1609
(47) NJKLM(I)	854.7683	162	5.2763		5.2763

Inspection of Tables 7, 8 and 9 reveals the existence of many interactions in the data, and a certain amount of differences in the effects observed under different themes.

Part of the difficulty in studying content is the large amounts of interactions that one finds, making generalizations difficult. Since most of the interactions represent effects of very specific combinations of different factors, they will be discussed only if they were stable across themes; in general, only stable effects will be discussed here. To facilitate the comparison among the three themes a summary of the effects found in each will be presented in Table 10. A significant effect is marked by a +; a non-significant one by n.s., and a - marks effects whose significance cannot be tested in this design. This applies to subjects effects and interactions of subjects with treatments, which are themselves estimates of error in this design and their significance cannot be tested.

Table 10

Summary of effects in the different themes

Source	CM	University	J-R
(1) Position in turn (I)	n.s.	n.s.	+
(2) Example (J)	n.s.	+	n.s.
(3) Referent (K)	+	+	+
(4) Dimension (L)	+	+	+
(5) Value (M)	+	+	+
(6) Ss (N(I))	-	-	-
(7) Position x Example	n.s.	n.s.	n.s.
(8) Position x Referent	n.s.	n.s.	n.s.
(9) Example x Referent	+	+	+
(10) Position x Dimension	n.s.	n.s.	+
(11) Example x Dimension	+	+	+
(12) Referent x Dimension	+	n.s.	+
(13) Position x Value	n.s.	n.s.	+
(14) Example x Value	+	+	+
(15) Referent x Value	+	+	+
(16) Dimension x Value	+	+	+

Source	CM	University	J-R
(17) Ss x Example	-	-	-
(18) Ss x Referent	-	-	-
(19) Ss x Dimension	-	-	-
(20) Ss x Value	-	-	-
(21) Position x Example x Referent	+	n.s.	n.s.
(22) Position x Example x Dimension	n.s.	n.s.	n.s.
(23) Position x Referent x Dimension	n.s.	n.s.	n.s.
(24) Example x Referent x Dimension	+	+	+
(25) Position x Example x Value	+	n.s.	n.s.
(26) Position x Referent x Value	+	+	n.s.
(27) Example x Referent x Value	+	n.s.	+
(28) Position x Dimension x Value	+	n.s.	n.s.
(29) Example x Dimension x Value	+	+	+
(30) Referent x Dimension x Value	+	n.s.	+
(31) Ss x Referent x Example	-	-	-
(32) Ss x Example x Dimension	-	-	-
(33) Ss x Referent x Dimension	-	-	-
(34) Ss x Example x Value	-	-	-
(35) Ss x Referent x Value	-	-	-
(36) Ss x Dimension x Value	-	-	-
(37) IJKL	n.s.	n.s.	n.s.
(38) IJKM	+	n.s.	n.s.
(39) IJLM	n.s.	n.s.	n.s.
(40) IKLM	n.s.	n.s.	n.s.
(41) JKLM	+	+	+
(42) NJKL(I)	-	-	-
(43) NJKM(I)	-	-	-

Table 10 continued:

Source	CM	University	J-R
(44) NJLM(I)	-	-	-
(45) NKLM(I)	-	-	-
(46) IJKLM	n.s.	n.s.	n.s.
(47) INJKLM(I)	-	-	-

From Table 10 it is clear that the factors of referent, dimension and value produced significant effects consistently across themes. However, the relation between them and the dependent variable is not strong, as is evident from the estimates of w^2 for each of these factors in each of the themes presented below in Table 11.

Table 11

Estimates of w^2 for referent dimension, and value in the three themes

Factor/Theme	CM	University	J-R
Referent	0.0085	0.064	0.019
Dimension	0.0023	0.035	0.0018
Value	0.0252	0.020	0.22

The meaning of the rather weak association is best discussed after the rest of the data has been presented. Therefore, we will proceed to the interactions.

The interactions that have been found significant in all three themes are of two types: interactions with the example factor and other interactions. The interactions with the example factor probably represent accumulation of

effects of factors that were difficult to control in constructing the variants; each of the main factors had two levels in this experiment: same and different, but the difference between them can be larger or smaller, and the interactions are probably the result of sampling from different points along this continuum when the variants were constructed. Further research is necessary on the question of the psychological similarity among the different referents, dimensions and values, in other words, the amount of psychological change introduced in the construction of the stimuli.

There were two interactions not involving the example factor: Referent x Value, and Dimension x Value, and they are discussed in greater detail. The means of each of the factors involved in these interactions are presented in Table 12.

Table 12

Means of the Referent x Value and Dimension x Value interactions in the different themes

		CM		University		J-R	
		Value		Value		Value	
		Same	Different	Same	Different	Same	Different
Referent	Same	5.69643	6.10491	6.35714	5.84152	7.34598	4.6808
	Different	6.59375	3.72321	5.15402	3.84821	6.85938	3.31473
Dimension	Same	5.99777	5.46205	5.90625	5.8683	7.03125	4.36384
	Different	6.29241	4.36607	5.60491	3.82143	7.17411	3.6317

The pattern of these interactions is quite interesting in that they throw light on the analyses done in terms of number of elements changed in the variants. But before interpreting them we should see whether these interactions improve our ability to predict the dependent variable. The following estimates of ω^2 were obtained:

(1)	CM:	Referent x Value Dimension x Value	0.045 0.008
(2)	University:	Referent x Value Dimension x Value	0.0034 0.0192
(3)	J-R:	Referent x Value Dimension x Value	0.0039 0.00413

Except in the case of the CM where the relations among main effects the dependent variable were extremely weak in the first place (Table 11), the interactions do not improve prediction markedly.

What do these interactions mean? The interaction of value and referent in the CM approximately tells us:

(1) If the value is kept constant, it is best to change the referent, in order to make one's contribution relevant;
(2) If one changes the value, it is best to keep the referent constant;
(3) If one keeps the referent constant it is best to change the value;
(4) If one changes the referent, it is best to keep the value constant.

The interaction of value and dimension tells us:

(1) If one keeps the value constant, it is best to change the dimension;
(2) If one changes the value it is best to keep the dimension constant;
(3) If one keeps the dimension constant, it is best to keep the value as well;
(4) If one changes dimension it is best to keep the value constant.

Do these rules remain constant across themes? The answer seems to be no. For example, the following rules were implied by the interaction of value and referent when the theme was University:

(1) If one keeps the value constant, it is best to keep the referent constant.
(2) If one changes the referent, it is still best to keep the value constant;
(3) If one keeps the referent constant, it is best to keep the value

constant as well;

(4) If one changes the referent, it is best to keep the value constant.

The rules for the CM told us that if one keeps one of the elements constant it is best to change the other one whereas here there are many cases where it is best to keep both elements constant. The pattern of the interactions for J-R is similar to that of the CM theme, but not identical, as can easily be found out from the table of means. Further research will be necessary in order to determine whether the rules differ as a function of theme since it is possible that here the differences were caused by the way the referents, dimensions and values were selected for constructing the variants.

It seems fair to conclude that this study has demonstrated that perceived relevance is a joint function of continuity in terms of the referent, dimension, and value. However, this conclusion is rather weak since these effects account for only a small portion of the total variance. There were many interactions in the data, which indicated that the effects were specific to the examples investigated, the configuration of factors, and the person making the judgment. No consistent effects due to change of speaker were found, but this may be a result of the element of artificiality in the present study.

It was suggested that further research is necessary on the question of the similarity among various referents, dimensions and values. This research will help us to estimate what amount of psychological change we induce by changing the referent, dimension, or value in the variants, and it will probably clarify the interactions found in the present study.

2.7. A brief summary

Two exploratory studies and three experiments were reported in this chapter. The first pilot study was a replication of Clarke's experiments (1975). Subjects attempted to put in the right order forty-four speaking turns from a conversation. Observation of the subjects performing the task demonstrated that they operated with fairly large topical units, and hence, as one would expect, that discourse has structure beyond chained pairs of utterances. The second study dealt with the processes of planning and interpretation and their function in generating cohesive discussions.

Some of the observations confirmed that planning occurs, and there were also observations consistent with the hypothesis that there are two stages in the interpretation of discourse, a stage of literal interpretation and a stage in which the interpreter goes beyond such literal interpretation. The data also suggested that the subjects tended to focus on the function of utterances in the specific context of discourse rather than on their illocutionary force. In this study the interlocutors were interviewed about their own discussion.

The three experiments all dealt with the concept of 'relevance'. Two of them demonstrated the effects of explicitness, directness, and the possibility of relating the referents on judgments of relevance in discussions. They also demonstrated a fair amount of agreement between the judgments of the interlocutors and independent judges. In the second experiment, unlike the first, one of the participants was asked to make her contribution irrelevant.

The third experiment demonstrated the effect of continuity of referent, dimension, and value on the judgment of the relevance of an utterance. It was noticed that strong interactions occurred in the data.

A fuller summary of these results and a discussion of their significance are presented in the next chapter.

Chapter 3

3. Summary and conclusions

3.1. The issues involved

In the introduction (1.1.) the question of how we put meanings together, given some prior specification of meaning, was raised, and the decision was made to investigate this problem as it applies to discourse, or more specifically, to conversations and discussions (1). This led to the following reformulations of the basic problem (1.1. and 2.3.):

(1) How is unity of content achieved in a discussion?
(2) How are the contents of a discussion interrelated?
(3) What are the constraints on content operating in a discussion?
(4) How do people decide what to say next in a discussion so that everything fits together, and what are their criteria for what fits?

There are two aspects to the question of putting meanings together: one is concerned with the way in which we put several units of meaning together to form a larger unit, and the other is concerned with the dynamic process of moving from one unit of meaning to another. The two aspects of the question are probably related, but from the questions raised earlier it is clear that the second aspect has been emphasized in the present investigation. We have suggested that the investigation of this question might contribute to our understanding of the production, interpretation, and structure of discourse and of cognitive processes in general - as combining meanings is, presumably, an important aspect of cognitive functioning (Kreitler and Kreitler, 1972).

From our survey of the literature in discourse analysis it emerged that many of the approaches study discourse in terms of speech acts (1.4.1.2.3.). These approaches emphasize the function of utterances rather than the content of discourse, whereas in the present approach the emphasis is on the content of discourse. The investigation of discourse in terms of speech acts has been criticised on the grounds that it is capable of handling the language used in ritualised situations such as making promises or in ritual insults, but it seems unlikely to handle relatively formal types of discourse whose aim is the exchange of ideas, since most of the development in such discourse seems to be in terms of its content rather

than in terms of 'illocutionary force'. Searle's theory of speech acts (1969) has probably influenced the approaches to discourse in terms of 'acts'. This theory emphasizes the importance of the perception of intentions to produce 'illocutionary effects' in the interpretation of discourse. It is relatively simple to imagine what the intentions are in the case of promises, orders, threats, etc., but it is rather difficult to imagine what intentions are involved in discussions whose aim is the exchange of ideas (2). Moreover, we have noticed that Labov's work (1972), which is an analysis in terms of acts, accounts for 'chaining' pairs of utterances in discourse, and our approach stresses the fact that discourse has structure beyond such 'chaining'. The same criticism applies to work in the sentence based approach to discourse (1.4.2.) as it accounts for chaining utterances in terms of the selection of lexical items and grammatical structure.

Thus, in addition to the questions raised earlier, we have to consider whether the data collected support our claim that discourse has structure beyond 'chaining' and whether there is evidence concerning the relative importance of 'illocutionary force' in the interpretation of discussions.

Data have also been collected pertaining to the question of point of view. It has been suggested that there is more than one possible description of discourse depending on the point of view adopted (see 1.4.1.2.). One can adopt the point of view of either of the participants or that of an external observer. We shall consider from the evidence we have to what extent these points of view converge.

In the next section a summary of the experiments performed and the main findings is presented. In a subsequent section these findings are discussed in relation to the questions raised, and finally, some of the inadequacies of the studies are considered and further studies are suggested.

3.2. A brief summary of the empirical studies

Two exploratory studies and three experiments were reported. The first study (for a detailed discussion see 2.1.) involved an attempt to extend Clarke's work (1975) - (see 1.4.1.2.2.). A conversation was recorded and the first forty-four speaking turns transcribed on to cards. A

speaking turn can be defined as the stretch of speech in a conversation from the onset of speech by one interlocutor till the other interlocutor speaks. Five subjects were given the cards in random order, and they attempted to put them in the order in which they appeared in the conversation. The method in the present investigation differed from Clarke's in three ways. One difference was in the number of turns studied, which was larger in the present study. A further change involved observing the subjects' strategies in performing the task; Clarke did not report such data. Finally, Clarke compared the performance of the subjects with the chance probability for placing a turn, n, in the n-th position, n+1 in position n+1, and the same for n+2, whereas a different method for assessing the reconstruction was employed in the present investigation. Sixty-nine subjects sorted the speaking turns according to topic or subject-matter under one of three conditions of presentation, twenty-three subjects in each: in the order of the original conversation, in the order given by one attempted reconstruction, and in random order. The judgments were converted into co-occurrence matrices and analysed by means of Johnson's Hierarchical Clustering program (1967) and Roskam-Lingoes' Multidimensional Scaling program.

One of the things that emerged from this study was that subjects found Clarke's task difficult, and three of them either failed to fit in all the cards or violated another constraint (e.g., change of speaker). Nevertheless, most of the time their reconstructions made sense. Observation of the subjects revealed that most of them operated with units larger than pairs of turns, at least at some stage in performing the task, as they tended to group together utterances that dealt with the same subject-matter.

Analysis of the sorting task data by means of Johnson's program revealed that the clusters obtained for a reconstruction resembled the clusters of the original conversation more closely than did the clusters obtained from a random sequence of the same set of turns. In order to facilitate the comparison of the structure obtained for the different conditions of presentation in the multidimensional scaling analysis, distances from the origin were calculated for each of the representations. The fact that the basic stimuli were identical in all the conditions of presentation enabled one to correlate these distances. It was found that the correlation between the distances obtained from the reconstruction data and the distances obtained from the original conversation data was

higher than the correlation between the distances obtained from the random sequence and the distances obtained from the original conversation. However, the difference between these correlations did not reach significance.

In the second exploratory study (see 2.2.) a discussion rather than an undirected conversation was investigated with the aim of testing a model dealing with the processes in the production of cohesive text in discourse. Two students discussed the issue whether Britain should stay in the Common Market (CM). Afterwards each of the interlocutors was interviewed individually and asked whether he had planned in advance what he was going to say in the discussion, and also the following three questions, concerning units roughly corresponding to grammatical clauses in three sections in the discussion: what the meaning of the unit was, what the intention of the person who made the utterance was, and to which other utterances in the text it was related.

The rationale for interviewing the interlocutors rather than other people was that this would enable one to get as close as possible to their point of view (see discussion in 1.1. and 1.4.1.2.). They were asked whether they had planned in advance what they were going to say because according to the model investigated planning is a necessary condition for the achievement of cohesion. The questions of meaning and intentions were included in order to obtain information as to how the interlocutors interpret discourse. The question of intentions is related to Searle's theory of the interpretation of discourse (see 3.1. and 1.4.2.1.3.), and it was hoped that the answers to this question would provide information as to how appropriate this approach is for the analysis of discussions. The question of relations was included in order to find out whether the categories of agreement-disagreement, additional information, exemplification, generalization, rejection, etc. are employed in the interpretation of discourse, and in what sequence they occur.

Both subjects said that they had not planned in advance what they were going to say in the discussion. The responses to the other three questions were categorized so that, as far as possible, responses in each category would cover similar aspects of the utterances to which they referred. Subjects did not distinguish well among the questions; nevertheless, the replies to each of them were analysed separately. The answers to the question of meaning ranged from paraphrases and explanations of

words in the target utterance, which remain fairly close to the utterance, to others that go beyond what is given, as is the case in supplying additional information or inferring what the speaker who made the utterance was thinking. An example of a reply of the first type is the comment that the word 'it' in the utterance 'it can't help the country' refers to coming out of the CM. An example of the second type is the listener's comment on the utterance "the community is inefficient but that can be changed"; he said that the community was not rigid and that it could be changed. Many of the answers to the question of intentions were in terms of the function of the utterance in the discussion - for example, that the target utterance explained a previous utterance. Other replies were in terms of the effect (both intended and actual) on the listener; the comment 'he (the speaker) wanted to convince me' is an example of a reply in this category. Many of the replies to the question of interrelations among the utterances were in terms of the position of the utterance in the argument, but instances of other categories mentioned in the model such as agreement-disagreement, additional information, etc. have also occurred. These replies normally referred to one or two utterances forward or backward. However, with regard to units in the production of discourse, it was observed that in one case an interlocutor asked a question to which he expected a negative answer, but he received a positive reply, which made him postpone till much later what he had planned to say before he asked the question. This observation suggests that planning and anticipation take place in discourse production, and that the unit of planning is larger than the individual utterance.

A small number of sequences of utterances have been discussed. These included sequences involving the rejection of a point followed by a justification. It was noticed that sequences including requests for clarification did not occur in the discussion, but many examples of self-clarification were observed.

Inspite of the interesting observations that emerged from the second exploratory study, it was felt necessary to examine the text more closely than had been done in this study in order to gain information about cohesion in discourse, and that the question of point of view required empirical investigation rather than axiomatic treatment. The three following experiments (2.4., 2.5. and 2.6. respectively) attempted to deal with these questions.

All three experiments dealt with the concept of relevance. In the first two studies a discussion between two students was recorded and the product of the discussion was analysed in terms of the theme (what the whole discussion was about), the referents (what they were talking about in specific places in the discussion) and the interrelations among the theme and referents. The relations were analysed in terms of Kreitler and Kreitler's (1976) semantic model. Both the interlocutors and another group of subjects judged the relevance to the discussion of utterances exemplifying cases in which, according to the analysis, referents were related to both the preceding referent and the theme, cases in which one of these relations was implicit, namely, when it was not stated in the text how the referents were related, cases in which the relation to the theme was indirect, namely, the referents were related to previous referents which were related to the theme, but they were not related to the theme directly; and cases in which the referents were difficult to relate by means of the dimensions of meaning described by Kreitler and Kreitler (1976). The discussions in the two experiments were on different themes. In the first the question whether universities fulfil their function was considered and in the second what should be done with a juvenile delinquent whose case history the participants had read. A further difference between the two experiments was that in the second study one of the subjects was asked to make her contribution to the discussion irrelevant.

The results of the first experiment demonstrated that the judgments of relevance made by the interlocutors were reliable, that the judgments of the interlocutors correlated positively and that the judgments of each of them correlated positively with the average ratings of an independent group. The relationship between structure of discourse and judgments of relevance was roughly as predicted: perceived relevance was highest when the referents were related both to the previous referent and to the theme, the mean judgment of relevance decreased when one of the relations was implicit or when one of the referents was related to the theme indirectly, and it was lowest when it was extremely difficult to relate the referents.

In the second experiment (see 2.5.), the rationale for asking the subject to make her contribution irrelevant was the expectation of getting a wider range of the phenomenon of relevance. However, this expectation was not fulfilled and the subject made her contribution irrelevant in a very subtle way. It was also observed that the other subject tended to

make her contributions irrelevant too.

The results of this experiment proved to be less reliable and clear than those of the previous one; however, their general direction is similar. There were two important deviations from the pattern of results observed earlier: one being that the correlation between the judgments of the subject who made her contribution irrelevant and those of the independent judges was low and non-significant this time; the other difference was that mean judgments for utterances in which the referents were related indirectly to the theme were higher than for those in which the relation was implicit, but the difference was non-significant.

The third experiment (see 2.6.) involved a slightly different conceptualization of the problem of relevance. We examined the effects on judgment of relevance of change of the 'referent' (the thing about which one talks), the 'dimension' (the aspect of the referent covered by the communication), and the 'value' (the specific thing said about the referent) in an utterance following another. The effect of the number of elements changed was also examined. This experiment was run in the form of a questionnaire. Subjects were given utterances from a discussion and ways of continuing each of them (variants). One can analyse each of the utterances in terms of its referent, dimension, and value. In the utterance that follows a given utterance each of these factors can be kept constant, or it can be changed. This means that according to this scheme there are eight ways to continue after a given utterance; for example, the referent, dimension, and value can all be kept constant, or they can all be changed, etc. Examples of these eight variants were written for each of the utterances. Subjects rated the relevance of the different continuations. Three themes were investigated in this way, and there were four examples for each of the themes. In order to determine whether these judgments were affected by a change of speaker, half of the subjects answering questionnaires belonging to each of the themes were asked to imagine that the second utterance was made by the same speaker, and the other half that it was made by a different speaker.

The results indicated that there were differences among the variants. They also showed that perceived relevance was highest when only one of the elements - the referent, dimension, or the value - was changed; the judgments of relevance declined when two elements were changed, and were lowest when

all three elements were changed simultaneously. The relevance of cases in which all three elements were kept constant (repetitions and paraphrases) varied in different themes. Nor were there consistent effects due to change of speaker.

A different analysis of the same data revealed that changing the referent, the dimension, and the value affected perception of relevance, but there were also strong interactions indicating that the effects are specific to the configuration of the factors and examples considered.

Next we shall consider these findings in relation to the questions raised in the introductory chapter.

3.3. Discussion of the findings

3.3.1. Methodological issues

The first question we have to consider is how stable the ratings of relevance were. At least for the interlocutors we found reasonably high correlations between their judgments of the same discussion on two separate occasions (the correlations ranged from 0.59 to 0.93).

Another issue that we have raised is that of point of view (see 1.1. and 1.4.1.2.1.). In the first chapter we suggested the possibility that there might be different descriptions of discourse according to whether one adopted the point of view of either of the participants or that of an external observer. In order to investigate this issue we collected ratings of relevance from both interlocutors and from independent judges and correlated these judgments. We found fairly good agreement between the interlocutors (correlation of 0.62 and 0.48 in the two experiments, respectively) and also between the interlocutors and the judges (correlations ranged from 0.34 to 0.89). It is interesting that the lowest correlation for an interlocutor and other judges was that for the subject who made her contribution irrelevant. Thus, we can conclude that the agreement between the interlocutors and an external observer is fairly good, unless a special interference was involved in the interaction. This suggests that there is considerable similarity in the interpretation of discourse irrespective of the point of view taken, but that there are some differences as well.

The problem of point of view arises in other areas of psychology, even though not exactly in the same way as in discourse analysis. For example, the problem arises in the perception of emotions (see Brown, 1965). The cues for identification of an emotion by the experiencer and an external observer only partly overlap: the observer does not have access to the proprioceptive stimuli of the experiencer, and the experiencer does not see his own expressions, while both may share the situation. As a related example, Jones and Nisbett (1971) summarized some evidence that actors and observers tend to attribute different causes to the same behaviour, and suggested this was caused by a tendency on the part of the actors to emphasize situational factors as determining their behaviour whereas observers tend to emphasize the actor's responsibility. Other sources of difference (Bem, 1972) include the fact that some of the stimuli available for self-perception are not available to others; an outsider may lack necessary information about the person's past behaviour; on the other hand, a person may distort his own behaviour in order to preserve his self-esteem. The examples from other areas have the advantage that one can relate the differences in point of view to observable or at least to specific cues. The situation is less clear in the case of discourse analysis. What could cause differences in point of view in the interpretation of discourse? Some of the information available to an interlocutor may not be available to an observer, as for example, that an instruction to be irrelevant was given before the interaction, or that he interpreted things in one way rather than in another possible way. It may be the case that to some extent the method used here involved turning the interlocutors into external observers of their own interaction, and thus the correlations obtained may be spurious. However, this is the best approximation we have for the time being, at least.

With the knowledge that the judgments employed were reliable and that there was a fair amount of agreement between the interlocutors and other observers we can proceed to consider the implications of these studies for some of the questions raised in the introduction.

3.3.2. General discussion

We have mentioned that much of the work in discourse analysis is in terms of speech acts, whereas the present approach emphasizes content. Searle's theory of speech acts (1969) probably influenced many of these approaches to discourse, even though it is a theory of 'competence', and

as such it does not apply to discourse directly. Some of the interview data in our second pilot study are relevant to the issue whether perception of intentions to produce 'illocutionary effects' is involved in the interpretation of discourse, as the theory of speech acts claims (see 3.1.). As already mentioned, the subjects were asked about the intention of the speaker in making various utterances. If the theory of speech acts is right, we would expect many of the replies to be in terms of the intention to produce 'illocutionary effects'. However, many of the replies were in terms of the function of the utterance in discourse, in so-called 'interactive' terms (see Widdowson, forthcoming), rather than in 'illocutionary' terms. This suggests that at least in the type of discourse we have investigated subjects' focus of attention is not on 'illocutionary force'. It is another question whether the present account of the structure of discourse fits the data better.

Much of the work in terms of acts and the work in the sentence based approach to discourse has been criticised for accounting only for 'chaining' pairs of utterances in discourse (3.1.), whereas the present approach claims that discourse has structure beyond 'chaining'. The questions raised earlier concerning the achievement of unity in discourse imply that this is the case. We have some data to support this claim, at least in so far as the conversation and the discussions we have investigated are concerned.

The first exploratory study demonstrated that discourse has structure beyond 'chaining' in that people tended to group utterances with a common subject-matter together rather than to put the utterances in the right order without any intervening stage in Clarke's reconstruction task (3.1.). The latter event should have occurred if 'chaining' were the only principle in the organization of the conversation. It is likely that 'chaining' is only one level of structure. The fact that subjects grouped the utterances according to subject-matter demonstrates the importance of content, since subject-matter is a unit of content. The results of the sorting task strengthen the interpretation of the observations just made. These results showed that the clusters obtained from a reconstruction that was assembled as described earlier resembled those obtained from the original conversation more closely than the clusters obtained from a random sequence of the same set of turns. The fact that the correlation of the distances from the origin in the MDS representation of the reconstruction and the original conversation was not significantly higher than that between the distances

in the random sequence and the original conversation probably reflects a weakness of the method rather than negative evidence (see discussion in 2.1.3.).

In Clarke's studies (1975) evidence was obtained for 'chaining' because this was what the studies attempted to demonstrate. Furthermore, these studies demonstrated the importance of semantic factors in 'chaining', but these factors have not been spelled out explicitly. The third experiment reported here moved one step in the direction of explicating these factors. It demonstrated the importance of continuity in terms of the referent, dimension, and value, for the relevance of an utterance following another utterance. It also demonstrated that these effects are specific to the example considered and the configuration of these factors.

The results of the first and second experiments also lend support to the claim that discussions possess structure beyond 'chaining'. In these experiments the importance of thematic continuity in the judgment of relevance in discussions was demonstrated. One of the types of example investigated in these studies was that of utterances in which the referent is related to the previous referent but not directly to the theme, and this is an approximation to pure chaining (3). We found a drop in the mean judgment in such cases as compared with cases in which thematic unity was sustained by linking the referents to the theme directly. This drop was not sharp, and it did not reach significance in the second experiment; nevertheless, it demonstrates the importance of thematic continuity.

However, the fact that we found examples in which the referents were not directly related to the theme and examples in which it was difficult to relate the referents suggests that unity of content is not sustained continuously in discussions. Inspection of the transcript of the discussion in the first experiment suggests that many of the examples in which deviations from unity occurred were of the type of 'side sequences' (Jefferson, 1972: see also 1.4.1.), and that in many cases both of the interlocutors contributed to them. Such sequences were recognized as irrelevant in the judgments, and therefore it might be suggested that there was a tacit agreement on the part of the interlocutors to deviate from unity. It is possible that such 'side sequences' have the function of enabling relaxation from the effort of sustaining unity.

The second experiment highlights the importance of social factors in determining to what extent unity of content will be sustained in a discussion. We can assume that the first experiment has demonstrated that unity of content as manifested in terms of the interrelations among the referents is positively correlated with judgments of relevance. The observation that the subject who was asked to make her contribution to discourse irrelevant did so in a subtle way suggests that she did not produce large deviations from unity, although it is not clear whether this was the result of limited imagination on her part or of the fear of behaving in an unsocial way. In the same experiment it was also observed that the 'naive' subject tended to match the other subject in terms of being irrelevant. It is likely that the behaviour of the interlocutor who made her contribution irrelevant created a dilemma for the other subject: if she chose to stick to the theme, her behaviour would be unrelated to that of the other interlocutor, and thus unsocial in a way, and if she chose to take account of what the other interlocutor was saying, her behaviour would be irrelevant in so far as the theme was concerned. In our study the social factors seem to have taken precedence in determining her behaviour.

It is likely that the extent to which unity of content is sustained in discourse is also determined by the way in which the situation where the interaction occurs is perceived. Deviations from unity are probably more acceptable in less formal types of discourse, and they should occur less frequently in formal discourse.

To summarize, so far we have adduced evidence that the focus of attention of the interlocutors in a discussion is in 'interactive' rather than in 'illocutionary' terms, which suggests that the speech act approach may not be very useful for the analysis of discussions. We have also adduced evidence that on the level of content discourse has structure beyond 'chaining'; thus, accounts of the structure of discourse in terms of 'chaining' are insufficient in so far as discussions are concerned, and probably undirected conversations as well. Some of the work in terms of 'acts' is restricted to chaining.

Part of our discussion dealt with the question of the extent to which unity of content is sustained in actual discussions. Some of our observations suggested that unity of content is not continuously sustained; deviations occur in the form of 'side sequences'. However, there seemed to be agreement

on the part of the interlocutors to produce such sequences, and it was thought that the frequency of their occurrence might depend on the formality of the situation in which the interaction occurs, among other things.

Now we can turn to the question of how unity of content is achieved. The model studied in the second pilot study (2.2.1.) provides one answer to this question in terms of the processes involved. It was suggested that these processes include taking into account what was said earlier, planning what to say next, and anticipating what the other interlocutor is going to say. In the second pilot study we have found some observations that suggested the existence of these processes in discourse production; however, it must be noticed that the data were collected after the discussion. If a demonstration is necessary at all that people take into account what was said earlier, the fact that they were able to answer the question concerning relations among utterances, and that they related them to previous utterances suggests that this is the case. With regard to the question of planning and anticipation, our subjects in the same study denied that they had planned in advance what they were going to say; however, we have already mentioned a case in which one of the interlocutors asked a question to which he expected a negative answer and received a positive one, and as a result he postponed what he had planned to say next till much later. This may suggest that people do not plan in advance what they are going to say, but that they do plan during discussion. It may be the case, however, that planning and anticipation occur, but people are not aware of these processes unless something goes wrong with the interaction (4).

The observation that some of the replies to the question of meaning went beyond what was given in the target utterance is also consistent with the hypothesis that anticipation takes place in discourse production, since the ability to go beyond what is given in an utterance is a necessary condition for anticipating.

The notion of unity of content was implicit in the second pilot study. In the three experiments that follow this concept was operationalized in terms of interrelationships among referents in the text. It was demonstrated that the explicitness, the directness, the possibility of relating the referents, and the continuity in terms of referent, dimension, and value from one utterance to the following one correlated positively with judgments of relevance. This demonstrates the psychological reality of these factors.

It is likely that people apply these criteria when they plan what to say next in a discussion and when they interpret the contribution of somebody else to the discourse. Thus, in planning his next utterance, an interlocutor will tend to select an utterance satisfying the following criteria - if he is behaving according to the 'co-operative principle' (Grice, 1968) and he wants to make his contribution relevant: its referent has to be related both to the theme and to the previous referent - explicitly and directly if possible - and the changes that he introduces in terms of the referent, dimension, and value in an utterance following another utterance should be gradual - in other words, not more than two of these elements should be changed at a time. The specific rules described in 2.6.3. have to be considered too. The principle of 'gradual change' just mentioned probably answers the question Grice (1968) raised (see 1.4.1.2.3.) as to how the topical foci can change in a conversation without becoming irrelevant. The rule seems to be that one can introduce changes, but they have to be introduced gradually.

It is likely that in the interpretation of discourse the interlocutors use the same set of rules. Deviations in the form of referents that are related implicitly or indirectly, or referents that are difficult to relate are recognized as less relevant, and if there is no reason to assume that the speaker is opting out of the 'co-operative principle' (Grice, 1968), they will be recognized as introducing 'implicatures', or as initiating a 'side sequence' (Jefferson, 1972). It seems that implicit relations among the referents will tend to produce 'implicatures' and indirect relations and cases in which it is difficult to relate the referents, will produce 'side sequences', but further research is necessary in order to determine whether this is the case (5).

The concluding remarks just made seem to provide an answer to the questions raised earlier (3.1.) concerning the achievement of unity in discussions and the constraints on what can be said at a given point in them. Our conclusions should also provide a partial answer to the question of how we put meanings together. The next section includes a discussion of further research that has to be done before we can regard our conclusions as established; some of the difficulty of research in discourse analysis in general and in the present investigation in particular is discussed as well.

3.3.3. Evaluation, criticism, and suggestions for further research

In order to evaluate the extent to which the aims we set ourselves have been achieved, it is necessary to consider the unsatisfactory points in the individual studies and a few general questions that have not been treated satisfactorily.

The main weakness of the first exploratory study is that the point of view problem is ignored in it, and the external observer's point of view has been adopted. A related difficulty is that the sorting task data were analysed across subjects and there was no way of knowing how the clusters that were obtained were related to the judgments of the individual subjects. Hence, it is difficult to interpret these results in a clear way.

In the second exploratory study the point of view issue has been dealt with by questioning the interlocutors about their own interaction. However, the analysis of their replies proved to be difficult, and, unfortunately, no data concerning reliability are available, although it is unlikely that the general conclusions of this study are wrong for this reason.

Lack of information about the reliability of the analysis of the text poses some difficulty for our first and second experiments as well. An additional problem in these experiments is that our conceptual scheme (see 2.3.) deals only with examples of irrelevance in which one rule is violated at a time, and the possibly cumulative effects of breaking these rules are not considered. In the discussions people frequently broke more than one rule at a time and there may have been cumulative effects in the judgments. Further research is necessary in order to determine what effects such factors may have. Such effects may have caused the inconsistencies in the results of the first two experiments. Another possible reason for the lack of consistency may be the fact that we have not taken into account the length of the chain relating referents that are indirectly linked to the theme.

In our discussions of the third experiment we have mentioned that further research is necessary on the question of the amount of similarity among various referents, dimensions, and values in order to determine the amount of psychological change that we introduce when we change each of these factors in the process of constructing variants. The investigation

of this question will also clarify the meaning of the interactions found in this study.

The last point leads us to more substantial problems that have to be investigated. We have drawn a distinction between referents that can be related and those that cannot be linked. However, we have not made explicit which referents can be related by means of which dimensions. A full answer to the questions raised earlier (3.1.) requires a solution to this difficult problem as well.

Finally, the processes in the interpretation of discourse must be extremely complex and fast. One way to make them amenable for study would be to simplify and slow them down. However, once we have done so, we cannot know whether we have drastically changed and distorted these processes. An alternative approach, for which we opted in most of our studies, is to try to investigate the processes after they have taken place, but here too we face the problem that the processes we investigate may be different from those we wanted to study.

Once the issues that we have raised have been dealt with, one could attempt to investigate the rules for putting meanings together as they apply to thought. One possible way of approaching the question would be to analyse verbal protocols of people trying to solve a problem in the same way as we analysed the discussions.

To sum up, it seems to me that we have made a modest start in investigating an extremely complex question. One can just express the hope that further research will increase our knowledge of both discourse and rules for relating meanings.

References

Argyle, M. Social Interaction. London: Tavistock Publications, 1969.

Argyle, M. Non verbal communications in human social interaction. In R.A. Hinde (ed), 1972. pp. 243-269.

Argyle, M. Bodily Communication. London: Methuen & Co. Ltd., 1975.

Argyle, M. and Kendon, A. The experimental analysis of social performance. Advances in Experimental Social Psychology, 1967, 3, 55-98.

Argyle, M., Lalljee, M. and Cook, M. The effect of visibility on interaction in a dyad. Human Relations, 1968, 21, 3-17.

Attneave, F. Applications of Information Theory to Psychology: A Summary of Basic Concepts, Methods, and Results. New York: Holt Rinehart and Winston, 1959.

Austin, J.L. How to Do Things with Words. London: Oxford University Press, 1962.

Bales, R.F. Interaction Process Analysis. Cambridge Mass.: Addison-Wesley Press Inc., 1950 (second printing 1951).

Bales, R.F. Interaction process analysis. In D.L. Sills (ed), 1968. pp. 465-471.

Bar Hillel, Y. Aspects of Language. Jerusalem: The Magnes Press, 1970.

Barker, R.G. (ed) The Stream of Behaviour. New York: Appleton-Century-Crofts, 1963.

Bavelas, A. Communication patterns in task-oriented groups. In D. Cartwright and A. Zander (eds), 1953. pp. 493-506.

Bell, M.A. The effects of substantive and affective conflict in problem solving groups. Speech Monographs, 1974, 41, 19-23.

Bem, D.J. Self perception theory. Advances in Experimental Social Psychology, 1972, 6, 1-62.

Birdwhistell, R.L. A kinesic-linquistic exercise: the cigarette scence. In J.J. Gumperz and D. Hymes (eds), 1972. pp. 381-404.

Blass, T. and Siegman, A.W. A comparison of speech, dictation, and writing. Language and Speech, 1975, 18, 20-34.

Boomer, D.S. Hesitation and grammatical encoding. Language and Speech, 1965, 8, 148-158.

Bransford, T.D. and McCarrell, N.S. A sketch of a cognitive approach to comprehension: some thoughts about understanding what it means to comprehend. In W.B. Weimer and D.S. Palermo (eds), 1974. pp. 189-229.

Brown, R. Social Psychology. New York: The Free Press, 1965.

Butterworth, B. Hesitation and semantic planning in speech. Journal of Psycholinguistic Research, 1975, 4, 75-87.

Campbell, R. and Wales, R. The study of language acquisition. In J. Lyons (ed), 1970, pp. 242-260.

Carroll, J.B. and Freedle, R.O. (eds) Language Comprehension and the Acquisition of Knowledge. Washington: Winston & Sons, 1972.

Cartwright, D. and Zander, A. (eds) Group Dynamics: Research and Theory. U.S.A.: Tavistock Publishers, Ltd., 1953 and 1968. (both editions were consulted).

Chafe, W.L. Discourse structure and human knowledge. In J.B. Carroll and R.O. Freedle (eds), 1972. pp. 41-69.

Cherry, C. (ed) Pragmatic Aspects of Human Communication. Dordrecht-Holland: Reidel Publishing, 1974.

Chomsky, N. Aspects of the Theory of Syntax. Cambridge, Mass.: The M.I.T. Press, 1965.

Chomsky, N. Reflections on Language. London: Maurice Temple Smith Ltd., 1976.

Cicourel, A. Ethnomethodology. In T.A. Sebeok (ed), 1974, Vol. 12/3, pp. 1563-1605.

Clancy, P. Analysis of a conversation. Anthropological Linguistics, 1972, 14, 78-86.

Clark, H.H. Language as fixed effects fallacy: A critique of language statistics in psychological research. Journal of Verbal Learning and Verbal Behavior, 1973, 12, 335-359.

Clark, H.H. and Lucy, P. Understanding what is meant from what is said: a study in conversationally conveyed requests. Journal of Verbal Learning and Verbal Behaviour, 1975, 14, 56-72.

Clark, H.H. and Haviland, S.E. Comprehension and the given new contract. In R. Freedle (ed), in press.

Clarke, D.D. The use and recognition of sequential structure in dialogue. British Journal of Social and Clinical Psychology, 1975, 14, 333-339.

Cole, P. The synchronic and diachronic status of conversational implicature. In P. Cole and J.L. Morgan (eds), 1975. pp. 257-288.

Cole, P. and Morgan, J.L. (eds) Syntax and Semantics: Volume 3. Speech Acts. London: Academic Press Inc. (London) Ltd., 1975.

Corder, S.P. and Roulet, E. (eds) Theoretical Linguistic Models in Applied Linguistics. Brussels: AIMAV, 1973.

Coulthard, M. Discourse analysis - a short review of the literature. Department of English, University of Birmingham (mimeo), 1975.

Coulthard, R.M. and Ashby, C.M. Doctor patient interviews. Working papers in discourse analysis, University of Birmingham, 1973.

Cozby, P.C. Self disclosure: a literature review. Psychological Bulletin, 1973, 79, 73-91.

Crystal, D. and Davy, D. Investigating English Style. London: Longman, 1969. pp. 95-124.

Dance, F.E.X. The concept of communication. Journal of Communication, 1970, 20, 201-210.

Davis, J.A., Laughlin, P.R. and Komorita, S.S. The social psychology of small groups: cooperative and mixed-motive interaction. Annual Review of Psychology, 1976, 27, 501-541.

Deutsch, M. The effects of cooperation and competition upon group process. In D. Cartwright and A. Zander (eds), 1968. pp. 461-482.

Dicks, D. Experiments with everyday conversation. In C. Cherry (ed), 1974. pp. 27-50.

Dressler, W. Towards a semantic deep structure of discourse grammar. In Papers from the 6th Regional Meeting of the Chicago Linguistic Society, Illinois, 1971.

Duncan, S. Some signals and rules for taking speaking turns in conversations. Journal of Personality and Social Psychology, 1972, 23, 283-292.

Dundes, A., Leach, J.W. and Ozkok, B. The strategy of Turkish boys' verbal dueling rhymes. In J.J. Gumperz and D. Hymes (eds), 1972. pp. 130-160.

Evans, J. Johnny Rocco. The Journal of Abnormal and Social Psychology, 1948, 43, 357-383.

Festinger, L. Informal social communication. In D. Cartwright and A. Zander (eds), 1968. pp. 182-191

Fillenbaum, S. Inducements: on the phrasing and logic of conditional promises, threats, and warnings. Psychological Research, 1976, 38, 231-250.

Fillenbaum, S. and Rapoport, A. Structures in the Subjective Lexicon. New York: Academic Press, 1971.

Fillmore, C.J. Verbs of judging. In C.J. Fillmore and D.T. Langendoen (eds), 1971. pp. 273-290.

Fillmore, C.J. and Langendoen, D.T. (eds) Studies in Linguistic Semantics. New York: Holt Rinehart and Winston, Inc., 1971.

Fisher, R.A. and Yates, F. Statistical Tables for Biological, Agricultural and Medical Research. London: Oliver and Boyd, 1953.

Fishman, J.A. Readings in the Sociology of Language. Hague: Mouton, 1968.

Fishman, J.A. The sociology of language: an interdisciplinary social science approach to language in society. In T. Sebeok, Vol. 12/3, 1974. pp. 1629-1784.

Fodor, J.A. The Language of Thought. New York: Thomas Y. Crowell Company, 1975.

Fodor, J.A., Bever, T. and Garret, M. The Psychology of Language: an Introduction to Psycholinguistics and Generative Grammar. New York: McGraw Hill, 1974.

Fodor, J.A. and Katz, J.J. (eds) The Structure of Language: Readings in the Philosophy of Langauge. New Jersey: Englewood Cliffs, 1964.

Frake, C.O. How to ask for a drink in Subanun. (1964). Reprinted in P.P. Giglioli (ed), 1972.

Frederiksen, C.H. Effects of context-induced processing operations on semantic information acquired from discourse. Cognitive Psychology, 1975, 7, 139-166.

Freedle, R.O. Language users as fallible information processors: implications for measuring and modeling comprehension. In J.B. Carroll and R.O. Freedle (eds), 1972. pp. 361-368.

Freedle, R, (ed) Discourse Production and Comprehension. Hillsdale, N.J: Lawrence Erlbaum Associates, in press.

Freedle, R.O. and Carroll, J.B. Language comprehension and the aquisition of knowledge: reflections. In J.B. Carroll and R.O. Freedle (eds), 1972. pp. 359-368.

Garfinkel, H. Studies in Ethnomethodology. New Jersey: Prentice Hall Inc., Englewood Cliffs, 1967.

Garfinkel, H. Remarks on ethnomethodology. In J.J. Gumperz and D. Hymes (eds), 1972. pp. 301-324.

Giglioli, P.P. (ed) Language and Social Context. London: Penguin Education, 1972.

Goldman-Eisler, F. Psycholinguistics: Experiments in Spontaneous Speech. London: Academic Press, 1968.

Gordon, D. and Lakoff, G. Conversational postulates. In Papers from the 7th Regional Meeting of the Chicago Linguistic Society, Chicago Linguistic Society, 1971. pp. 63-84.

Grice, H.P. Logic and conversation. (1968). Reprinted in P. Cole and J.L. Morgan (eds), 1975. pp. 41-58.

Gould, J. and Kolb, W.L. (eds) A Dictionary of Social Sciences. London: Tavistock publications, 1964.

Groendyle, J. and Stockhof, M. Modality and conversational information. Theoretical Linguistics, 1975, 2, 61-112.

Gumperz, J.J. and Hymes, D. (eds) Directions in Sociolinguistics: the Ethnography of Communication. New York: Holt, Rinehart and Winston, Inc., 1972.

Gutsknecht, C. (ed) Grundbegriffe und Hauptstomungen der Linguistik. Hamburg: Hoffman und Campe, 1977 (forthcoming).

Halliday, M.A.K. Categories of the theory of grammar. Word, 1961, 17, 241-292.

Halliday, M.A.K. Notes on transitivity and theme in English. Journal of Linguistics, 1967, 3, 37-81, 199-244, and 1968, 4, 179-215.

Halliday, M.A.K. Explorations in the Functions of Language. London: Edward Arnold (Publishers) Ltd., 1973.

Halliday, M.A.K. and Hasan, R. Cohesion in English. London: Longman Group Ltd., 1976.

Harder, P. and Kock, C. The theory of presupposition failure. Copenhagen, 1975. (Mimeo).

Harris, Z. Discourse analysis. Language, 1952, 28, 1-30. Reprinted in J.A. Fodor and J.J. Katz (eds), 1964. pp. 355-383.

Hartley, E.L. Communication. In J. Gould and W.L. Kolb (eds), 1964.

Hasan, R. Grammatical Cohesion in Spoken and Written English. London: Longmans, 1968.

Haviland, S.E. and Clark, H.H. What's new? Acquiring new information as a process in comprehension. Journal of Verbal Learning and Verbal Behaviour. 1974, 13, 512-521.

Helm, J. Essays on the Verbal and Visual Arts. U.S.A.: University of Washington Press, 1967.

Hendricks, W.O. On the notion 'beyond the sentence'. Linguistics, 1967, 37, 12-51.

Hinde, R.A. (ed) Non-verbal Communication. Cambridge: Cambridge University Press, 1972.

Hurwitz, J.I., Zander, A.F. and Hymovitch, B. Some effects of power on the relations among group members. In D. Cartwright and A. Zander (eds), 1953. pp. 483-492.

Hymes, D.H. The ethnography of speaking. In J. Fishman (ed), 1968. pp. 99-138.

Hymes, D.E. On communicative competence. (1971). Reprinted in J.B. Pride and J. Holmes (eds), 1972. pp. 269-293.

Insko, C.A. Theories of Attitude Change. New York: Appleton-Century-Crofts, 1967.

Jacobs, R.A. and Rosenbaum, P.S. (eds) Readings in English Transformational Grammar. Mass.: Ginn and Company, 1970.

Jakobson, R. Concluding statement: linguistics and poetics. In T. Sebeok (ed), 1960. pp. 350-377.

Jefferson, G. Side sequences. In D. Sudnow (ed), 1972. pp. 294-338.

Johnson, D.W. Communication and the inducement of cooperative behaviour in conflicts: a critical review. Speech Monographs, 1974, 41, 64-78.

Johnson, S.C. Hierarchial clustering schemes. Psychometrika, 1967, 32, 241-254.

Jones, E.E. and Nisbett, R.E. The actor and the observer: divergent perceptions of the causes of behaviour. In E.E. Jones et al. (eds), 1971. pp. 79-94.

Jones, E.E., Kanouse, D.E., Kelley, H.H., Nisbett, R.E., Valins, S. and Weiner, B. (eds) Attribution: Perceiving the Causes of Behaviour. U.S.A.: General Learning Press, 1972.

Karttunen, L. Implicative verbs. Language, 1971, 47, 340-358.

Kelley, H.H. Communication in experimentally created hierarchies. In D. Cartwright and A. Zander (eds), 1953. pp. 443-461.

Kendon, A. Some functions of gaze direction in social interaction. Acta Psychologica, 1967, 26, 22-47.

Kintsch, W. The Representation of Meaning in Memory. Hillsdale: Lawrence Erlbaum Associates, 1974.

Kintsch, W., Kozminsky, E., Sterby, W.J., McKoon, G. and Keenan, J.M. Comprehension and recall of text as a function of content variables. Journal of Verbal Learning and Verbal Behaviour, 1975, 14, 196-214.

Kirparsky, P. and Kirparsky, C. Fact. In D.D. Steinberg and L.A. Jakobovits (eds), 1971. pp. 345-369.

Kreitler, S. and Kreitler, H. Dimensions of meaning and their measurement. Psychological Reports, 1968, 23, 1307-1329.

Kreitler, H. and Kreitler, S. The model of Cognitive Orientation: towards a theory of human behaviour. British Journal of Psychology, 1972, 63, 9-30.

Kreitler, H. and Kreitler, S. Cognitive Orientation and Behaviour. New York: Springer, 1976. Chapter 2.

Labov, W. The study of language in its social context. (1970). Reprinted (in abridged form) in P.P. Giglioli (ed), 1972. pp. 283-307.

Labov, W. Rules for ritual insults. In D. Sudnow (ed), 1972. pp. 120-169.

Labov, W. and Waletzky, J. Narrative analysis: oral version of personal experience. In J. Helm (ed), 1967. pp. 12-44.

Landis, M.H. and Burtt, H.E. A study of conversations. The Journal of Comparative Psychology, 1924, 4, 81-89.

Lennard, H.L. and Bernstein, A. The Anatomy of Psychotherapy. New York: Columbia University Press, 1960.

Linde, C. and Labov, W. Spatial networks as a site for the study of language and thought. Language, 1975, 4, 924-939.

Lyons, J. Human language. In R.A. Hinde (ed), 1972. pp. 49-85.

Lyons, J. (ed) New Horizons in Linguistics. Great Britain: Penguin Books Ltd., Harmondsworth, 1970.

Mackay, D.M. Formal analysis of communicative processes. In R.A. Hinde (ed), 1972. pp. 1-25.

Marr, T.J. Conciliation and verbal responses as a function of orientation and threat in group interaction. Speech Monographs, 1974, 41, 6-18.

McLeish, J. and Martin, J. Verbal behaviour: a review and experimental analysis. Journal of General Psychology, 1975, 93, 3-66.

Meltzer, L., Morris, W.N. and Hayes, D.P. Interruption outcomes and vocal amplitude: explorations in social psychophysics. Journal of Personality and Social Psychology, 1971, 18, 392-402.

Mennell, S. Ethnomethodology and the new Methodenstreit. Acta Sociologica, 1975, 18, 287-302.

Mishler, E.G. Studies in dialogue and discourse: an exponential law of successive questioning. Language in Society, 1975, 4, 31-51. (a).

Mishler, E.G. Studies in dialogue and discourse II: types of discourse initiated by and sustained through questioning. Journal of Psycholinguistic Research, 1975, 4, 99-121. (b).

Mohan, B.A. Do sequencing rules exist? Semiotica, 1974, 12, 75-96.

Mortensen, C.D. and Arntson, P.H. The effect of predispositions toward verbal behaviour on interaction patterns in dyads. The Quarterly Journal of Speech, 1974, 60, 421-430.

Natale, M. Convergence of mean vocal intensity in dyadic communication as a function of social desirability. Journal of Personality and Social Psychology, 1975, 32, 790-804.

Olson, D.R. From utterance to text: the bias of language in speech and writing. The Ontario Institute for Studies in Education, Toronto, 1975. (Mimeo).

Pak, T. Searle's illocutionary fallacies. Semiotica, 1974, 11, 145-188.

Parsons, T. Social interaction. In D.L. Sills (ed), 1968.

Pease, K. Approximations to conversation. British Journal of Social and Clinical Psychology, 1972, 11, 189-190.

Pease, K. and Arnold, P. Approximations to dialogue. American Journal of Psychology, 1973, 86, 769-776.

Pike, K. On kinesic triadic relations in turn taking. Semiotica, 1975, 13, 389-394.

Pride, J.B. Sociolinguistics. In T.A. Sebeok (ed), 1974. pp. 1607-1628.

Pride, J.B. and Holmes, J. (eds) Sociolinguistics, Middlesex, England: Penguin Education, 1972.

Reber, A.S. On psycho-linguistic paradigms. Journal of Psycholinguistic Research, 1973, 2, 189-319.

Reiches, M.A. and Harral, H.B. Argument in negotiation: a theoretical and empirical approach. Speech Monographs, 1974, 41, 36-48.

Roskam, E. and Lingoes, J. "Nonmetric multidimensional scaling", GKLR MINISSA - 1, standard version, March, 1969, Rev. 8/25/71.

Ross, J.R. On declarative sentences. In R.A. Jacobs and P.S. Rosenbaum (eds), 1970. pp. 222-272.

Sacks, H. An initial investigation of the usability of conversation for doing sociology. In D. Sudnow (ed), 1972. pp. 31-74. (a).

Sacks, H. On the analysability of stories by children. In J.J. Gumperz and D. Hymes (eds), 1972. pp. 325-345. (b).

Sacks, H., Schegloff, E.A. and Jefferson, G. A simplest systematics for the organization of turn-taking for conversation. Language, 1974, 50, 676-735.

Schachter, S. Deviation, rejection, and communication. In D. Cartwright and A. Zander (eds), 1968. pp. 165-181.

Schacter, S., Ellerston, N., McBride, D. and Gregory, D. An experimental study of cohesiveness and productivity. In D. Cartwright and A. Zander (eds), 1968, pp. 192-198.

Schegloff, E.A. Sequencing in conversational openings. American Anthropologist, 1968, 70, 1075-1095.

Schegloff, E.A. Notes on a conversational practice: formulating places. In D. Sudnow, (ed), 1972. pp. 75-119.

Schegloff, E.A. and Sacks, H. Opening up closings. (1973). Reprinted in R. Turner (ed), 1974. pp. 233-264.

Schlesinger, I.M. Towards a structural analysis of discussions. Semiotica, 1974, 11, 101-108.

Searle, J.R. What is a speech act? (1965). Reprinted in J.R. Searle (ed), 1971. pp. 39-53.

Searle, J.R. Speech Acts: an Essay in the Philosophy of Language. Cambridge: Cambridge University Press, 1969.

Searle, J.R. (ed) The Philosophy of Language. London: O.U.P., 1971.

Sebeok, T.A. (ed) Style in Language. U.S.A.: M.I.T. Press, 1960.

Sebeok, T.A. (ed) Current Trends in Linguistics. The Netherlands: Mouton & Co., Printers, The Hague, 1974. Vol. 12/3.

Shapiro, D.A. Conversational structure and accurate empathy: an exploratory study. British Journal of Social and Clinical Psychology, 1976, 15, 213-215.

Sinclair, J. McH. and Coulthard, R.M. Towards an Analysis of Discourse: the English Used by Teachers and Pupils. London: O.U.P., 1975.

Skinner, B.F. Verbal Behaviour. U.S.A.: Appleton-Century-Crofts, Inc., 1957.

Sills, D.L. (ed) International Encyclopedia of Social Sciences. U.S.A.: The Macmillan Company and the Free Press, 1968.

Simon, H.A. and Hayes, J.R. The understanding process: problem isomorphs. Cognitive Psychology, 1976, 8, 165-190.

Soskin, W.F. and John, V.P. The study of spontaneous talk. In R.G. Barker (ed), 1963. pp. 228-281.

Speier, M. Some conversational problems for interactional analysis. In D. Sudnow (ed), 1972. pp. 397-427.

Stampe, D.W. Meaning and truth in the theory of speech acts. In P. Cole and J.L. Morgan (eds), 1975. pp. 1-38.

Steinberg, D.D. and Jakobovits, L.A. (eds) Semantics: an Interdisciplinary Reader in Philosophy, Linguistics, and Psychology. Cambridge: Cambridge University Press, 1971.

Stenson, H.H. and Knoll, R.L. Goodness of fit for random rankings in Kruskal's nonmetric scaling procedure. Psychological Bulletin, 1969, 71, 122-126.

Stephenson, G.M., Ayling, K. and Rutter, D.R. The role of visual communication in social exchange. British Journal of Social and Clinical Psychology, 1976, 15, 113-120.

Sudnow, D. (ed) Studies in Social Interaction. New York: The Free Press, 1972.

Terwilliger, R.F. Meaning and Mind. New York: Oxford University Press Inc., 1968.

Thibaut, J. An experimental study of underprivileged groups. In D. Cartwright and A. Zander, (eds), 1953. pp. 100-120.

Turner, R. (ed) Ethnomethodology. Middlesex, England: Penguin Education, 1974.

Van Dijk, T.A. Some Aspects of Text Grammars: a Study in Theoretical Linguistics and Poetics. Paris: Mouton, 1972.

Verplanck, W.S. The control of the content of conversation: reinforcement of statements of opinion. Journal of Abnormal and Social Psychology, 1955, 51, 668-676.

Vygotsky, L.S. Thought and Language. Cambridge, Mass.: M.I.T. Press, 1962.

Weimer, W.B. and Palermo, D.S. (eds) Cognition and the Symbolic Process. New Jersey: Lawrence Erlbaum Associates, 1974.

Werner, C. and Latane, B. Responsiveness and communication mechanism in dyadic interactions. Bulletin of the Psychonomic Society, 1976, 8, 13-15.

Widdowson, H.G. An Applied Linguistic Approach to Discourse Analysis. Unpublished PhD thesis, University of Edinburgh, 1973. (a).

Widdowson, H.G. Directions in the teaching of discourse. In S.P. Corder and E. Roulet (eds), 1973. pp. 65-76. (b).

Widdowson, H.G. Approaches to discourse. In C. Gutsknecht (ed), (forthcoming), 1977.

Winer, B.J. Statistical Principles in Experimental Design. New York: McGraw Hill, 1971.

Appendix 1

Footnotes

Footnotes to Chapter 1

(1) The issue of the language of thought will be briefly taken up again in the section on discourse production. The issue is discussed in a detailed way in Fodor, Bever, and Garret (1974) and even more so in Fodor (1975). Fodor (1975) argues that it is necessary to assume the existence of a language for representation and computing in thought. Fodor (ibid) argues that the language of thought cannot be a natural language since there is evidence that non-linguistic organisms think and also because in a Chomskyan (1965) framework a child must be born with some language in order to learn a language; from a psychological point of view learning involves testing hypotheses concerning alternatives in the Universial Grammar, and the child has to represent these hypotheses and the outcomes in some language, but it must be a language other than the natural language, since it is the natural language that the child is learning. All this may be true, but it does not follow from this that an organism, once it has mastered a natural language, does not employ it in thought. Moreover, on page 156 Fodor makes the following point: "The upshot of these remarks is a suggestion that I regard as entirely speculative but very interesting to speculate about: viz., that the language of thought may be very like a natural language...." and the question then is what are the criteria for saying that the two languages are one and the same or two different languages. However, no matter which position one adopts on this issue, there seems to be agreement that the study of semantics should be rewarding to a psycholinguist.

Inspite of these reservations, the term 'language of thought' will be retained.

(2) There is a distinction between discourse and text; it will be discussed in section 1.2.

(3) Further general differences between spoken and written language are discussed by Olson (1975). Blass and Siegman (1975) present empirical data comparing speech (in an interview situation), dictation, and writing.

(4) Sinclair and Coulthard (1975) mention the difficulty inherent in studying conversations. Crystal and Davy (1969) make the observation that discussions, as opposed to conversation, are monothematic.

I shall retain this distinction.

(5) For a discussion of the concepts of 'standardization' and 'decontextualization' see Lyons (1972).

(6) For examples for this type of work - see reviews by Pride (1974) and Fishman (1974).

(7) Psychologists, too, have done a considerable amount of research that has considered stretches of language that extend beyond the sentence. Much of this work will not be discussed here since most of it deals with memory for texts (for example, Kintsch, 1974; Frederiksen, 1975; Kintsch, Kaminsky, McKoon and Keenan, 1975). Simon and Hayes (1976) have investigated comprehension of instructions, but they too seem to be concerned with the formal structure of language. The emphasis on the formal structure is probably due to the fact that when one studies memory one needs a characterization of the material studied (Freedle and Carroll, 1972) so as to enable one to evaluate what was remembered and what changes were introduced by the subject. For this reason even studies emphasizing the contribution of the subject in comprehension are studies of text, since they want to show that the subject goes beyond what is given (an example of this approach is provided by Bransford and McCarrell, 1974), and thus one has to characterize what is given.

(8) Studies of change of attitude provide clear examples of changes in the recipient of the message and sometimes in the initator as well; there are, for example, studies demonstrating that communicating a message with which one disagrees produces a change in attitude. For a summary of research of this kind see Insko (1967). I will not discuss these studies because they are hardly related to discourse analysis. Even studies involving relatively naturalistic situations in this area deal with general variables like change of attitude.

(9) Sacks takes into account the fact that some categories have only one member, for example, a country has only one prime minister.

(10) Garfinkel (1967) mentions also more specific factors concerning the biography of relations etc.

(11) I am aware of the fact that trying to check things with members may involve one in a problem of an infinite regress.

(12) Freedle (1972) investigated the question of identification of topics experimentally. He thought that the cues people use in the identification of the topic of an ongoing conversation are key words and either an implicit or explicit set of alternative topics. He investigated this hypothesis by selecting a list of topics, giving the list to his subjects, reading different amounts from a text and asking the subjects to guess the topic. His specific hypothesis was that the efficiency of identification should increase as the number of alternatives decreased and the amount of text read increased. He found support for this hypothesis, and an analysis of the errors made by subjects revealed that their guesses are not random.

It is my feeling that the situation of this experiment is so artificial that it would be difficult to generalize from the findings to any real situation.

(13) There is some research about the way specific acts are interpreted. Clark and Lucy (1975) have investigated how requests are interpreted and Fillenbaum (1976) has investigated conditional promises, good predictions, and warnings expressed in different ways. This work is not discussed in detail because it deals with the comprehension of isolated artificially constructed sentences, and thus it is not directly related to the work reported here.

(14) Sinclair and Coulthard's book (1975) is just one example of a series of different attempts at discourse analysis. These include analyses of doctor-patient interactions, television interviews, committee meetings etc. I will not go into that amount of detail here.

(15) Example from Widdowson (forthcoming).

(16) Generally, Halliday's (1973) approach emphasizes use of language and the social context of this use. He thinks that language has a "meaning potential", or a potential of things that can be expressed in language. He represents this potential as networks of choices. If we place language in the social context, we can say that options in the construction of linguistic forms realize options in behaviour that relate to the social situation. Speech acts belong to the interpersonal function of language, but use of language normally involves selections from the other two components of language, the ideational and textual, as well.

(17) Chafe (1972) is another linguist who has attempted to extend the scope of linguistics from the sentence to discourse.

Footnotes to Chapter 2

(1) This work was carried out under the supervision of Dr. T.F. Myers, and my thanks are due to him. Parts of the data were presented in a conference in Stirling, 1974. The data have been reported more fully in an unpublished paper, University of Edinburgh 1973.

(2) Apparently, this criticism applies to much of the research on word associations (see Terwilliger, 1968).

(3) This observation is consistent with Garfinkel's (1967) observation that things are often not said explicitly in conversations, and that the interlocutors can recover them nevertheless.

(4) Chaining has been observed by Vygotsky (1962) in studies of concept formation in children. For example, if the child is shown a yellow triangle and asked to pick similar objects from a set of objects in front of him, he may collect triangular shapes of different colours. He may suddenly notice the colour of one of the objects, and start collecting objects of the same colour, forgetting about the shape of the objects. There is some analogy between this behaviour and chaining in conversation.

(5) One could interpret in this light an experiment carried out by Garfinkel (1967) in which subjects were told that a new counselling method was being investigated, and that there was a counsellor in the next room from whom they could expect yes/no answers to their questions. They were asked to comment on the advice they received. The advisor was in fact a tape-recording of a randomized sequence of the words 'yes' and 'no'. Nevertheless, most subjects seemed to make sense of the advice they were given.

(6) The raw scores of this experiment, too, were transformed into expected normal scores. However, since the transformed scores yielded results that were practically identical to those obtained from the raw scores, only the analyses of the raw scores are presented.

(7) It is probably the case that there is a continuum underlying the distinction between explicit and implicit relations. The same is probably also true for the distinction between direct and indirect relations. This was one source of difficulty in the selection of actual examples. The selection of examples was particularly difficult in the second experiment (see 2.5.3.).

The following summary should clarify the criteria for categories 2 and 3:

1. For inclusion in the second category (implicit relation) either the relation of the referent of the utterance to the theme or its relation to the preceding discourse had to be implicit, and in either event the other relation had to be explicit. In future research it will be best to separate the two types of instances belonging to this category.
2. For inclusion in the third category (indirect relation) the relation between the referent of the utterance and the theme had to be through the preceding utterance, which was explicitly linked to the theme, and its relation to the preceding discourse had to be explicit.

Footnotes to Chapter 3

(1) Concerning the distinction between conversations and discussions see footnote 4, chapter 1.

(2) One will have to distinguish between intentions such as to humiliate the other, to impress him, to display knowledge, to win the argument, etc., which produce neither an 'illocutionary' nor a 'perlocutionary' effect, and others that do. For example, the intention to get the listener to recognize that one intends one's utterance to be recognized as a promise can produce an 'illocutionary effect', and the intention to convince the listener can produce a 'perlocutionary' effect. Searle (1969) is interested in 'illocutionary' effects.

(3) It is only an approximation because it occurs in a particular place in a discussion, and it <u>is</u> linked to the theme, although indirectly.

(4) Vygotsky (1962) discussed various accounts of the development of conscious awareness in the context of conceptual development. Thus, Piaget postulated two laws to account for the development of conscious awareness of one's thought. The first law is Claparede's law, which says: ".... the more smoothly we use a relationship in action, the less conscious we are of it; we become aware of what we are doing in proportion to the difficulty we experience in adapting to the situation" (p. 88). However, this law does not explain the mechanism whereby awareness develops, hence, Piaget cites an additional law, 'the law of shift': "To become conscious of a mental operation means to transfer it from the plane of action to that of language, i.e. to re-create it in imagination so that it can be expressed in words. This change is neither quick nor smooth.... mastering an operation on the higher plane of verbal thought presents the same difficulties as the earlier mastering of that operation on the plane of action" (ibid).

Vygotsky is probably right when he claims that these laws can explain why the child is not aware of his concepts, but not how he becomes aware of them. In his own explanation Vygotsky stresses the importance of the change from non-verbalized to verbalized introspection and the influence of the training in scientific concepts at school.

There is probably some truth in Claparede's law, even though Vygotsky has shown that the specific findings on which it was based can be explained in a different way. In the case of planning and anticipation in a conversation, it is likely that we are not aware of these processes for as long as things run smoothly. There seems to be an advantage to this situation, for the load on our attention is reduced thereby.

(5) The preceding discussion has mentioned the issue of "explicitness". Other investigators have also noticed the importance of explicitness of the relations in discourse. Schlesinger (1974) thinks that it is an important aspect in the structure of discussions but he did not produce experimental evidence. One can reinterpret a series of experiments by Haviland and Clark (1974) and Clark and Haviland (in press) as supporting the importance of this distinction. They did not obtain judgments of relevance however, and did not deal with real discourse. Haviland and Clark investigated pairs of sentences in which the 'given' information for the second sentence was explicitly stated in some instances and in other cases was implied. For example, in the following pair of sentences the first involves an explicit antecedent whereas the second involves an implicit one.

1. We got some beer out of the trunk. The beer was warm.
2. We checked the picnic supplies. The beer was warm.

Haviland and Clark found that the latter type of example took longer to comprehend than the former and the difference remained when they controlled the examples for repetition of words. The difference probably reflects the time it takes to make the inference from the implicit relation.

Appendix 2

An example of a reconstruction of the conversation (pilot study 1)

A: We have had a conversation already this afternoon. Er.... what are you doing just now?

B: In a way of academic work?

A: No, just for interest.

B: I have I have been reading a few Social Science books.

A: Oh, really?

B: I have been sort of getting interested in since we've been doing psychology. I was last year, you know, the.... the course we do is, you know, we do biology with it and last year I was read quite a bit of biology, but this year since we started psychology, I have really got into the Social Sciences. I've really lost interest in biology now, especially the biology we are doing this year.

A: Oh, come on, the brain is a biochemical organ.

B: Honestly?

A: Or it can be considered as such. It will be nice to get every sort of personality er.... every mental state down to biochemical workings.

B: Yes, but....

A: I did quite a lot of that last year sort of....

B: Biology, yea....

A: I find it fascinating this year.

B: Pardon?

A: I love the biochemistry.

B: Really?

A: I hope to end up with it.

B: Could you have done it this year instead of computer science?

A: I could have done, but I didn't want to. You know, it wouldn't fit the timetable, that's right.

B: That's.... that's a pity because actually the physiology this year is quite relevant to the psychology, you know. You know, they deal with the nervous system this year, so that er....

B: But that's really interesting. You know, I was reading that some psychiatrists think that now you can er.... treat mental states, you know, mental disorders, just by the use of drugs.

A: Manic depression, manic depression....

B: Well, I was thinking more of a person who has depressions very frequently....

A: Yes.

B: So that if er.... if, say, a person has a.... you know, periodic depressions, rather er....

A: Yea.

B: .... will after a time er.... the depressions can become sort of detached from the actual cause, so that you can become depressed without anything actually causing it, you know....

A: Oh yes. It should be possible.

B: One and two halves. Do you like psychology?

A: Psychology is O.K..... But I'm only doing it so that I can get a job in a psychology unit as a biochemist.

B: Yes. I would have thought, though.... you would have to do physiology as well.

A: Yes, I have done a bit of physiology.

B: What other subjects do you do besides....?

A: Computer science.

B: Computer science? So you do three subjects.

A: Well, one and two halves.

B: What's the relation?

A: What's the relation....

B: Between psychology and....

A: Oh, no, no.

Appendix 3

Newspaper articles read by the Ss taking part in CM debate

First of six viewpoints giving both sides of the argument that affects us all

Why I say no to the Market and yes to the world

THE GREAT REFERENDUM DEBATE — OUT / IN — DAY 1

If we vote YES, there will be no more **real** elections in Britain because it will make no difference which party gets power.

The Treaty of Rome, the Common Market regulations, and the European Court take absolute priority over British law.

Our people and our M.P.s will have no power to change those laws.

They will go on and on, affecting us, our children and our children's children.

Do we really want to mortgage away our freedom (and theirs) to power-hungry, unaccountable and inefficient bureaucrats in Brussels?

Does this exaggerate? We have been in the Common Market for two and a half years and have tobogganed downhill.

Inflation is runing at more than 20 per cent, firms are going bankrupt, unemployment is soaring beyond the million mark, food prices continue to climb, our balance of payments has suffered disastrously.

Every shopper can make a measured judgment. Let's start with food prices in the Common Market.

Butter costs 83p a lb. in Rome. Eggs are 54p per dozen in Paris. Cheddar cheese is £1.04 a lb. in Bonn, while rump steak in the same city costs an incredible £3.07 per lb. Stewing steak is £1 per lb. in Frankfurt and bacon an astronomical £2 per lb.

It takes 13 hours 30 minutes of work in France to earn the money to buy a basket of groceries which in Britain would take only seven hours six minutes. And in Italy it would take nearly 17 hours.

By agreements already made these will be our prices too if we vote YES.

How does that come about?

Because we are in the Market we already have to tax cheaper food which comes in to us from other countries. And these taxes must rise by 67 per cent by the beginning of 1978, even without inflation.

There is no way that food prices will not rise if we stay in the Common Market. It is inevitable and planned.

The notorious Common Agricultural Policy does this: its main purpose is to support inefficient but politically influential Common Market peasant farmers by buying up the surplus foods they produce so that prices stay high in the shops.

It is this policy which dyes grain green so that it cannot be eaten, which buries fruit, and stores beef into ships which sail nowhere.

It creates gargantuan pats of butter and vegetables which reflect in huge (and undrinkable) wine lakes.

More than 500,000 tons of beef have passed through the cold stores of the Common Market in the last 18 months. At any one time there are 250,000 tons in storage.

There is enough to give 21,538,461 people an 8oz. steak every week for the next 12 months at a time of soaring prices and world-wide hunger (including our own old age pensioners).

We cannot even plan our own industry.

Steel, so vital to our economic growth, is now manipulated from Brussels. The regulations of the Common Market deny our Ministers the right to decide.

When the British Steel Corporation recently wanted to take over a Sheffield plant from a company in financial difficulties, the Brussels supervisors refused unless B.S.C. gave up other plants — which would have meant a great loss of jobs in high unemployment areas.

Our nationalised industries are imperfect but they are run by those whose first allegiance is to Britain.

What of oil? We could not sell cheaper to British companies than to foreigners. Nor could British firms be given preference during another blockade.

No British Government can guarantee that jobs created by that flow of black liquid gold are in Scotland and the North East, and not in Rotterdam and the Ruhr.

And what is the Common Market's track record? Member countries cannot even manage their own economies properly.

The rate of unemployment is a sign of the economic health of the country.

In Britain it's bad. But in France, unemployment rose two and a half times faster over the last 12 months. And in Germany three and a half times faster.

While in victimised Denmark (which joined the Common Market at the same time as Britain) it rose eight times as fast. Is there any wonder the Danes want to come out with us?

Don't be deceived into thinking we can change things if we stay in.

The "renegotiations" of our terms of entry changed not a word or number in the Treaty of Rome, which sets out an old-fashioned hankering for "perfect" competition and devil-take-the-hindmost-nation.

It also means being submerged in the turgid and undemocratic waters of an European Parliament dominated by parties which could never take root in our society.

The alternatives? If we take the Americas, Africa, Asia and Eastern Europe there is a market of 1,500 million, or almost seven times bigger than the Common Market without counting our additional partners in Scandinavia, New Zealand and Australia.

Now is the time to turn to the rest of the world.

The latest balance of trade figures show that, excluding our oil deficit, we are in surplus with the sole exception of the Common Market and especially the Germans who account for most of our unhappiness.

We have certain advantages in world trade. English is a world-wide language. We have gained world-wide experience by our history, and we have a world-wide reputation for business integrity.

Now is the time to say No to the Common Market and Yes to that world.

A PERSONAL VIEW

By Clive Jenkins

General Secretary of the Association of Scientific, Technical and Managerial Staffs

NEXT: Into Europe with Jeremy Thorpe

(Scottish Daily Express - 29. 5.75)

Referendum Brief

Sovereign little poor man

Sovereignty came late into the Europe debate—about a year ago when anti-marketeers began to realise that such issues as food prices and jobs no longer looked certain to swing votes their way. Mr Enoch Powell and others had long disliked the "loss of sovereignty" said to be involved in joining Europe, but the question whether Britain has less or more say over its own affairs inside the EEC did not appear on Mr Wilson's renegotiation agenda. Even so, the white paper on renegotiation published after the Dublin summit meeting in March devotes a good deal of space to sovereignty and the role of parliament, and admits that

> membership of the community raises for us the problem of reconciling (the) system of directly applicable law made by the community with our constitutional principle that parliament is the sovereign legislator and can make or unmake any law whatsoever.

The popularised version of the white paper, though, which matters because it will be dropped through 25m British letterboxes towards the end of this month, asserts

> through membership of the market we are able to advance and protect our material interests. This is the essence of sovereignty.

The trouble with the sovereignty debate—and, presumably, one of the reasons why the anti-marketeers fixed on it—is that "sovereignty", used on its own, is a purely emotive term without precise meaning. This is why it is possible for the two sides to predict diametrically opposed effects from Britain's EEC membership on its sovereignty. The pro-marketeers use the term to mean effective power to run Britain's affairs in an international context where Britain is no longer a superpower. The anti-marketeers' definition is more legalistic, revolving around Britain's theoretical ability to control the source of law and legitimate public authority within its boundaries. This distinction between political and legal sovereignty (clearly drawn by Dicey) makes it possible for a country to have one type of sovereignty without the other. For instance, parliament may be perfectly in control of a country's legislative processes but may find the laws it makes regularly flouted by individual groups —say, by the trade unions.

The anti-marketeers agree that they mean something different from the pros when they talk about sovereignty, but that does not mean they all take the same view. Mr Enoch Powell believes sovereignty to be vested in parliament, choosing to ignore parliament's frequent lack of control even over domestic affairs and government's (ie, the cabinet's plus Whitehall's) increasing tendency to grab power from it. Mr Tony Benn asserts that sovereignty is only lent to parliament by the people and has to be returned intact at every election. This enables him to keep a straight face in claiming that because of the momentousness of the decision on EEC membership, parliament's decision in 1972 to take Britain into the common market should not have been taken without consulting the people, and that the referendum is a legitimate —indeed, essential—device for making good that error.

Under either definition there can be no doubt that Britain has had to give up some sovereignty on entering the EEC. But this is not a new experience. The EEC is only one of a number of international clubs Britain belongs to, and each of these has exacted a fee amounting to a diminution in Britain's control over its own affairs.

Under article 5 of the Nato treaty, Britain is under an obligation to come to the defence of any of its Nato partners under attack, whether the government or the parliament of the day likes it or not. Under the IMF system Britain, like the other member countries, accepts limitations on its freedom to change the par value of its currency and undertakes to provide a large volume of information about its internal economic affairs in return for IMF help in the event of balance of payments troubles. Gatt, although a less ambitious organisation than originally planned, binds its member countries with firm rules not to impose discriminatory custom duties or quotas without consulting its partners. More celebrated still, Britain has just promised in the International Energy Agency to share scarce oil resources with other member countries in the event of another oil crisis—without a cheep of protest from anti-marketeers.

The Concorde agreement with France committed Britain to spending an unlimited amount over an undefined period, with no clear escape clauses. If Britain really wanted to, of course, it could leave any or all of these clubs, in the same way as the anti-marketeers

How not to do it

Westminster's machinery for keeping an eye on Brussels has been operating for the best part of a year now, and the general consensus is that it has not been working very satisfactorily. This is not the fault of the two parallel parliamentary scrutiny committees—one for the Commons, one for the Lords, and made up of both pro- and anti-marketeers—who sift through all the proposals and directives emanating from Brussels and single out those of particular legal or political importance for debate in the House. They have done an efficient job coping with the flood of about 4,000 documents a year from Brussels and catching up with the backlog that had accumulated before they started work. For all practical purposes, they are now bang up to date.

The problem starts further down the line. So far, the Commons have found time for about 20 debates about proposed Brussels legislation, but the great majority of these were held late at night and were limited to 90 minutes. Worse, another 23 community documents recommended for debate are still waiting. Squeezing them all in would take at least another 12–15 debates. But with parliament having already spent so much time on the EEC this year, enthusiasm for allowing still more is at rock bottom.

A committee on procedure for the scrutineers three weeks ago recommended hiving off some of the less important debates into a new standing committee, leaving only the most vital subjects to be taken on the floor of the House. A decision on this is expected before the summer recess, and if positive should reduce the backlog of debates—although pro-marketeers feel that the antis will resist the hiving off into committee of as many debates as they can. But if Britain stays in the EEC, interest in this kind of scrutiny may eventually fade anyway. Few of the other member countries (except Denmark) go in for such elaborate vetting arrangements. If decisions in Brussels have to be taken in a hurry, the system breaks down in any case because the scrutineers never get a chance to raise the alarm. In the long run the only way of exercising satisfactory parliamentary control over Brussels legislation will be through a more powerful European parliament.

now propose it should leave the EEC. But the political, economic or even legal consequences could be enormous, and the likely effect would be to reduce it, if not to the political standing of a Liechtenstein, then to something not much more.

The difference between the loss of British sovereignty caused by membership of any of these organisations and membership of the EEC is partly a matter of degree—although anti-marketeers argue that, uniquely, the obligations under the EEC treaties, unlike others, have no time limit. But there is also one fundamental way in which even most pro-marketeers agree the EEC differs from any other international club. In the words of the white paper on legal and constitutional implications of British membership of the EEC, published by the Labour government in May, 1967,

> The constitutional innovation would lie in the acceptance in advance as part of the law of the United Kingdom of provisions to be made in the future by instruments issued by the community institutions—a situation for which there is no precedent in this country. It would also follow that within the fields occupied by the community law, parliament would have to refrain from passing fresh legislation inconsistent with that law . . .

In other words, Britain has let itself in for an arrangement under which community legislation is directly applicable to British law, without any need for parliamentary approval. Where decisions by British courts conflict with community law, the European Court of Justice can overrule them (though how far this power goes has been called into question by a recent decision by the German supreme court, giving German law the last word where community law conflicts with basic human rights under German law). Equally important, the community also has direct powers of taxation. At the moment they are limited to customs duties, agricultural levies and a very small portion of value added tax, but that could be the thin end of the wedge. This spending is not subject to national parliamentary scrutiny, and only in part to supervision by the European parliament—even after its recent stand, insisting on some control over the community budget.

Clearly the effects on Britain's control over its own affairs of joining the EEC are not negligible, and should not be played down. Where the anti-marketeers go wrong is in exaggerating them out of all proportion and in chasing the wrong scapegoats. Mr Tony Benn claims that he

> can think of no other body of men in the western world who enjoy so much political power as the European commission enjoys over the lives of so many people, without a shred of direct accountability to those people for the use they may make of their power.

To this, Mr George Thomson, an ex-Labour cabinet minister and one of Britain's two EEC commissioners, answers that the commission merely proposes; it is the council of ministers which disposes. True, the commission has limited powers of delegated legislation, but these are no greater than the delegated powers enjoyed by statutory bodies in Britain which no one would ever think of questioning. If the commission got out of hand, the European parliament could sack the 13 commissioners en bloc (though it has never yet had occasion to). Clearly the European parliament is an instrument of control over the Brussels bureaucracy which could become more effective once direct elections to it get under way—one reason why Mrs Barbara Castle, a leading anti-marketeer, sees Strasbourg as a good place to carry on the fight if the referendum goes against her side.

The council of ministers, which makes all the major decisions, continues to be accountable to national parliaments, who have been known to give individual ministers an uncomfortable time if they act too independently. Britain, with its parliamentary scrutiny committees, has evolved a more elaborate machinery than most other member countries to vet Brussels legislation and make sure that parliament knows what is going on (see box). But any minister in the council can use his power of veto, which since the 1966 "Luxemburg compromise" has meant he can effectively block any council decision (however much Mr Benn, once again elevating theory above its station, says he cannot).

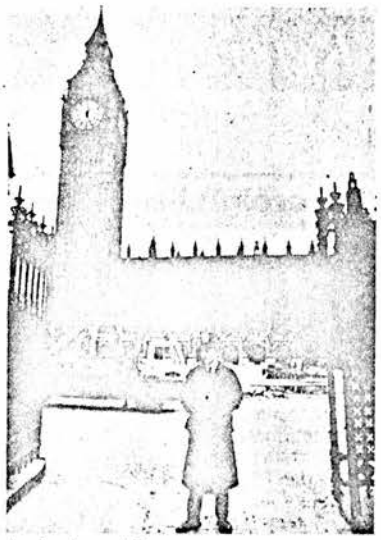
But even if a decision slipped through which one of the member countries did not feel it could live with, the community could do little to make it comply. It has no formal powers of enforcement. So if Britain wants to break its treaty of accession after a "no" vote in the referendum, there does not seem to be anything the community can do to stop it, other than being difficult about a free trade area or any other post-withdrawal deal for Britain. Treaty or no treaty, Britain's renegotiation white paper spells out that

> Parliament has the undoubted power to repeal (the) act, on which our ability to fulfil our treaty obligations still depends. Thus our membership of the community in the future depends on the continuing assent of parliament.

In other words, Britain can always feel free to get out of the deal if necessary, even at the risk of thoroughly upsetting its partners.

It is only if it wants to stay in that it will have to play the game by the rules, inevitably losing some control over its domestic affairs in the process. The reason for Britain, or any other member country, to put up with this is the same as for entering any bargain: because it hopes to get more out of it than it is giving up. Limitations on freedom of action are worth having if they confer greater freedom of action in more important fields. The EEC, like the other major international clubs, will carry on whether Britain remains a member or not. Their rules very often bind not only their members but non-members too. Countries in the old European Free Trade Area, for instance, now enjoy almost completely free trade with the EEC, but in return have to abide by EEC rules on state aids and competition and on steel and coal pricing. If Britain left but wanted to continue trading with the community—as it must—it would be in the same position as Efta, of having to accept the very community rules which Mr Benn and others wrongly complain about, but without having any say in drawing them up. Most important, the United States, the Commonwealth, and the developing countries have all made it clear that a lone Britain would carry a lot less weight with them than a Britain in the community.

The community is about the freedom to exercise real power, externally and internally. The theoretical powers the anti-marketeers appeal to—particularly those allegedly vested in parliament—have either already been whittled away by Whitehall, or fail to protect Britain against the real world economic order that it is living in.



Losing its grip?

Appendix 4

Notes of the Ss considering the question whether Universities fulfil their function

Universities: have they failed?

Yes	No
Limited number of people enrolled, necessarily limited overall benefit to society	Were everyone to have a PhD., consequently waste of time, money and pride on part of individual and on part of society when PhD's do not use skills (menial labor)
In spite of efforts tutorials, etc. education is not personal; university students lost in crowd	Responsibility self taught to those who must teach themselves; perseverance and discipline as personal reward
Arbitrary limitations, rules imposed as to course load, subjects etc. tend to limit choice and breadth: society of technicians	Hopefully student keeps abreast of world developments and educates self generally while specializing in university

Neil Ryrie

Functions? - Education - social life -

Lecture	Tutorial
Not so good Impersonal	Can fulfil purpose better

Better if all tutorials - But not enough staff.
Chosen for academic qualities
Education - or research?

Professors etc. - chosen for books written - to write book;

S.L. (social life?) - Good - necessary for education - maturation - socialization

Also political life of student - activist etc.

Opportunity for realization.

Appendix 5

Analyses of the stimuli studied in the first and second experiments

It will probably be necessary to borrow concepts from graph theory or from matrix algebra in order to present my analysis of the texts. Since I have not done so yet, I will just attempt to justify my choice of examples for each of the categories in the debate about universities and about Johnny Rocco.

Universities:

(1) Utterance H: So far the discussion has been concerned with the educational function of university, the way in which it operates etc. Here the speaker says: '.... there is more to universities than sheer education,' thus linking his utterance to the theme and linking it to what he says next, the next thing being an additional thing to universities (utterance H).

(2) Utterance I: This utterance comes as a conclusion of what was said earlier about the manner in which universities operate, and since it is an evaluation of whether universities achieve what they are designed for, it is directly linked to the theme.

(3) Utterance K: This utterance comes at the end of a passage demonstrating the way in which universities operate so that the point this utterance makes follows; it is related to the theme in so far as it involves a negation of the evaluation that universities mould technicians and thus fail to fulfil their function, a point mentioned earlier.

(4) Utterance M: Earlier they were saying that university succeeds in that it provides opportunities for exposure and independence; here the element of change and novelty is added to the ones of exposure etc. While writing this summary it occurred to me that the relations in

this example are not as clear as would be desirable.

(5) Utterance R: This utterance is a generalization of the previous one (I am assuming that the meaning of crystalize is in the range of inclusion of mature) and it refers to an action of the referent of the theme - university.

(6) Utterance B: The relation between psychology and university is implicit and therefore the relation to the theme is implicit.

(7) Utterance C: The relation between arts and university is implicit.

(8) Utterance E: It seemed to me that underlying these utterances are the relations among university, students and subject-matter. These relations are not made explicit.

(9) Utterance F: Relates to what was said earlier in the discussion, and implies that this is the way university operates, but this is not said.

(10) Utterance T: This utterance relates to the theme through the implicit assumption that there are different universities in different locations.

(11) Utterance A: This utterance is a counter example to the generalization that people dare not ask questions in lectures. It is part of a sequence involving evaluation of lectures, which is part of a comparison of lectures and tutorials, and the last is presumably related to the theme.

(12) Utterance D: This comment is attached to an argument that universities include different subjects, which may require different methods of teaching, but not directly to the theme.

(13) Utterance G: This utterance is related to the previous one concerning the way lecturers are appointed and through

it to the theme, but not directly.

(14) Utterance J: This comment is related through the comparative mode to other people coming to university for whom it involves a break in style of education, but it is not directly linked to the theme.

(15) Utterance Q: This utterance is related to the consequence of the referent 'university' of increasing political consciousness, but not directly to the theme.

(16) Utterance N, O, P, S, U: It is quite clear that N, O, P, S, and U do not relate to the theme and in most of the cases to what was said before either.

Johnny Rocco

(1) Utterance C: The utterance is related to the theme in that it says what should be done with people like Johnny, and it is related to the previous utterance in that it negates the action suggested there.

(2) Utterance D: The preceding utterance states the theme of the discussion, and the present one is an answer to the question raised; therefore, it is related to both the theme and the previous utterance.

(3) Utterance L: The previous utterance was an attempt to give a possible answer to the question set by the theme and the present utterance negates the answer given and explains why.

(4) Utterance M: A continuation of the sequence to which L belongs. It relates to the theme by being an answer to the question set and it relates to the previous utterance on the comparative mode.

(5) Utterance N: The previous utterance said what course of action should not be taken with Johnny and described the consequences of this course of action, here the manner in which they occur is described, thus it is related to both the previous utterance and to the theme.

(6) Utterance B: This utterance may be a conclusion from what has been said so far, but this is not made clear in the text.

(7) Utterance I: It is clear from the text that putting Johnny in a large group will have the consequence of destroying the identity Johnny has, but this is not quite explicit in the way it is expressed.

(8) Utterance K: There may be a relation in which 'discipline' is part of the 'fatherly' manner of treatment, but this is not clear from the text.

(9) Utterance O: The previous turn described the consequences of one state, and the present one states the consequence of the opposite state. The relation perhaps of generalizing or of addition is not made explicit.

(10) Utterance S: The previous utterance mentioned action that should be taken, whereas the present discusses antecedents for any action, but this is not made explicit.

(11) Utterance E: The referent 'sense of sin' is related to his interest in religion but not directly to the theme of what should be done about him.

(12) Utterance F: This utterance relates to an earlier utterance saying that Johnny needs clearly defined limits, and is related to the theme through it.

(13) Utterance H: This utterance relates to the previous one in that it describes the causes or the manner in which his anti-social behaviour occurred, but there is no direct

link to what should be done with him.

(14) Utterance P: This utterance and the previous episode relate in that both describe things that are good or bad to Johnny, but it is not directly related to what should be done with him.

(15) Utterance T: This utterance is related to the theme by adding information to an earlier utterance suggesting what should be done with Johnny, but it is not related directly.

(16) Utterance A, G, J, Q, R: These seemed to me to be unrelated to the theme or to previous utterances, even though they are concerned with Johnny.

Appendix 6

Johnny Rocco - excerpts and summary of case history

Johnny was born in a large mid-western industrial city. His parents, Italian immigrants, had settled there at the turn of the century. There were nine other Rocco children, each about two years younger than the next, when Johnny was born. Regina, who was twenty when Johnny came along, was the oldest. Then came Francisco, Aldo, Sebastian, Georgio, Paul, Antonio, Carlay and Richard. Two more children came after Johnny was born, David, a year and a half younger than Johnny, and Mike. Mike died in infancy.

The neighborhood where the Roccos lived was known as one of the worst slums in the city. It was known, too, for its high rate of crime and juvenile delinquency. It was a neighborhood of factories, abandoned tumble-down shacks, junk yards, pool rooms, cheap liquor joints, and broken houses with sagging steps and paint peeling from their sides.

Johnny's father worked irregularly - as a bar tender, teamster, or day laborer. Two things he did regularly - he drank and gambled. In his drunken rages he often attacked the children and their mother. The little ones learned to scramble across the floor like beetles, finding shelter under tables or beds, where his kicking feet could not reach them.

Johnny's short, dark excitable mother was always sick and complaining. She suffered from heart disease. The children fought. They were noisy and destructive. There was seldom enough food in the house. The rent was never paid and Mrs Rocco lived in constant terror of landlords and evictions. Nevertheless, the Roccos moved frequently. They moved every nine or ten months, but never to a better house or neighborhood. They moved through a succession of drafty, sparsely furnished four- and five-room apartments which were heated by coal or kerosene, the geography of their lives circumscribed by dirt, squalor, and factory and slaughter-house smells and noises.

Johnny's memories of his early childhood are sporadic. He remembers that the family had a dog, Teddy, when he was a very little boy. Teddy got sick and lay beside the kerosene stove, quiet and shivering. Johnny recalls that Teddy was still alive when one of his older brothers put Teddy into a sack half-full of trash, carried him to the garbage dump, and left him there to die.

Johnny remembers visiting another of his brothers at a reform school.

That was a little later, and that memory has the quality of a holiday; the reform school, Johnny says, was in a "country-like" place.

Johnny remembers hiding in a snow-bank once, when his mother was very angry. He remembers fights between his brothers when his mother stood in the middle of the room screaming, and blood ran from his brothers' noses. And Johnny remembers how his father died. A heavy, regular thumping awoke Johnny one night. He got up, and, still dazed with sleep, wandered into the kitchen where the family usually gathered. His father was lying on the floor.

"Some men my father was out with had dragged him up the stairs and put him there. There was blood on his face. Blood was coming out of his ears. He was holding the leg of the kitchen table with one hand, an' he was moanin', and he kept pounding his foot on the floor. One of my brothers called an ambulance, but he died."

Johnny was then five.

By the time Johnny's father died, four of the older Rocco children had married and moved away. (Johnny's oldest sister married a drunkard. Four of his brothers contracted "forced marriages" while still in their teens. Two of them have been divorced and remarried, one of them once, the other twice, though the family is Roman Catholic.) What was left of the Rocco family continued in its dismal course, the children getting into one difficulty after another and Mrs Rocco, sick and confused, and inept, trudging from school to police station to court, listening to complaints about them, and from hospital to welfare agency, asking for help and still more help.

If the Rocco boys ever had any tender feeling for one another, that was lost somewhere in the maelstrom of accumulated want, frustration, and jealousy that was the lot of each of them. As much as possible, the members of the household moved in separate orbits, their paths converging under the family roof only when they paused to sleep or to eat their pasta. Of the seven remaining children only one boy, Georgio, assumed any responsibility toward the others and that was thrust upon him. He was sixteen, the oldest of the children, when his father died. If Georgio worked, he contributed part of his earnings to the family. When the rest of the children got so

out of hand that Mrs Rocco implored him to do something, he applied the only discipline he knew; he beat them brutally.

"My brothers-. I don't despise them," Johnny says, "but the past I don't forget. They used to push me around, I wasn't afraid of them. I used to tell them, 'Go ahead. Hit me. Hit me. What do I care?' Except Georgio! The fear I had for my brother Georgio, if he threatened me - if he only looked at me - I'm scared of him, that's all."

Johnny slept in a bed with Richard and David. Richard, a dark, scowling boy who was born with a twisted foot, was two years older than Johnny. David, who was a year and a half younger, had congenital syphilis and suffered from anemia. Johnny always felt that because his mother was ill and Richard and David were sickly, the three of them were drawn into an alliance from which he was excluded.

"I was the strongest so I had to sleep across the foot of the bed. Even if I wanted to swap places with them, there was no dice. They wouldn't. And, anyway, my mother wouldn't make them. Those brass beds! You know, they got bars at the end. Jesus'. In the winter, those bars are cold. I used to lay there and they'd ball me up against the cold bars. They'd kick my face and my back and pull the covers off. I'd be - half of me out of the covers, freezing, or laying on those bars.

Sunday mornings, hell, you wanted to sleep. It was cold. Then the fighting would start. They'd be crowding an' pushing an' I'd yell, or kick them. It used to make me mad. Then my big brother, Georgio, he'd be lying in his bed in the other room, an' he'd yell, 'Johnny! Come here!'

Whenever my brother Georgio said, 'Johnny! Come here!' Christ! I'd be scared. Walking to the sink or the table, wherever was - to me, that was walkin' into a deathhouse. I'd get out of the bed and go up to the bed where he was an' bam! He'd let me have it. He used to give me charlie-horses so's I couldn't move my arm. He broke my nose once. My head hit the door an' I went out cold."

The only person in that household Johnny loved was his mother. "Sometimes she was wrong," Johnny says, "but she tried to be good to us. She would just as soon take a meal out of her own mouth and give it to us.

But she never favored me. She favored Richie and Davie. Davie - he'd dead now - he was her favorite. I was trouble to her. I was always on the outside," Johnny says heavily. "When Davie died she said she wished it was me instead."

Johnny was especially bitter toward David, who was the baby of the family. "I used to lick him. I used to fight and break things. I was always trouble. Even before he was sick, Davie was petted. He got everything, even a bike. I didn't get anything -.

I never went any place. If I went any place, I had to go on my own. My people never took me out to a show, or any place with them. On Sundays when all the kids on the corner had money, I didn't.I'd go and clip it. I never had a birthday party. I never had a birthday present outside of what Mr O'Brien, a friend I had when I was bigger, gave me..... Christmases, and I was always in the wrong. May be I cracked Davie, or I was yelling, or somebody complained. It was always something. My mother would get my brother Richie something, and my brother Davie something. She'd tell me in advance I wasn't going to get anything. Yeah, it made me mad."

Johnny didn't want to be "always trouble" to his mother. He wanted to show her how much he loved her, but he could never quite reach her. He wanted to make her love and pet him, too, as she did David, but he didn't know how. He had a secret way of paying her tribute: "Money I stole, I would never give to my mother." He earned a little, periodically, selling True Confession magazines. He gave her that. Then she, in turn, would give him a dime.

Once, Johnny says he borrowed a shoe-shine box, "hook-jacked" school, and worked from morning 'til night. "I made two bucks and a half. Boy! I was hungry, but I wouldn't even buy a roll. I wouldn't even spend something for carfare home. I wanted to give my mother all of it."

But even when Johnny was determined to make his mother love him he was annoying, he was so insistent. He'd rush home after school and make a great show of sweeping the floors or polishing the stove. He'd urge and urge his mother to send him on an errand. Tense and watchful for the extravagant praise he craved, he'd even make overtures to David. But something always happened to burst the bubble, a quarrel with David, a rebuff

from his mother - and Johnny, overcome with rage, frustration, and self-pity would swing back to thieving, baiting David, and screaming savagely at his mother.

One of the subterfuges Johnny's fumbling mother resorted to in her efforts to pacify landlords who were always hounding her was to keep her screaming, battling children out of the house as much as possible. As soon as each child was old enough to shift for himself, she would turn him out on the streets. It is not surprising then that one after another the Rocco boys became known to the police. Their father himself had a long court record for assault, disorderliness, drunkenness; five of Johnny's brothers, who started in childhood, ran up police records....

Johnny hadn't been running the streets long when the knowledge was borne in on him that being a Rocco made him "something special"; the reputation of the notorious Roccos, known to neighbors, schools, police, and welfare agencies as "chiselers, thieves, and trouble-makers," preceded him. The cop on the beat, Johnny says, always had some cynical smart-crack to make. Certain homes were barred to him. Certain children were not permitted to play with him. Wherever he went - on the streets, in the neighborhood settlement house, at the welfare agency's penny milk station, at school, where other Roccos had been before him, he recognized himself by a gesture, an oblique remark, a wrong laugh.

"Everybody always knew all about me," he recalls. "I always had a bad name. I felt cheap. Everybody gave me hell."

If Johnny was sinned against, he was also sinning. "Sure I was bad. I was fresh with my mouth. I stole. As far back as I remember I got in jams. There were things I never done, too, but I always got accused anyway. I didn't care. I didn't. Because I knew, if I was in court and the judge said, 'You're free,' I was going to go right out stealin' an' getting in jams again. I was noted for a crook. I had it in me."

Most slum boys get a feeling of protection and prestige from membership in some neighborhood gang, but Johnny wasn't one of those. He knew members of various gangs in the many neighborhoods where he had lived. He rotated among all of them but remained always on the fringes of their society. Johnny wanted to be a fully accepted member of a gang, but he could never

get along with any one group for long. Johnny was a maverick:

"I never fitted in. I never belonged any place. I never found anybody that liked me a lot, and that I liked, and could trust. I never played baseball, football, playing with the kids. I just had kids I clipped with - Bagdads, they used to call us - like the forty thieves. You know, a bunch of sloppy kids that ain't got nothing.".....

One of the most urgent cravings Johnny can recall was his fondness for birds. He yearned to keep some of the ones he trapped, but he couldn't; his mother wouldn't permit it. She was afraid the landlord would object. "I liked birds. I was always thinking about them," Johnny says. "I got the nick-name, 'Sparrow.'"

If Johnny's home and street life were turbulent, it was no different at school. He had entered kindergarten when he was four and a half years old. During the next seven years he had changed schools seven times, had been in at least fifteen different homerooms, and was only in the third grade. His reading was on a second grade level; he was poor in arithmetic, and was almost completely unable to spell.

He was a trial to his teachers. They complained that he was "nervous, fidgety, sullen, obstinate, cruel, disobedient, disruptive." "Teachers can stand him for only one day at a time," one said. "He talks to himself. He fights. He insists on wearing his hat at school. When in Miss Clark's room, he attempted to kick her. He isn't going to be promoted. He knows this and refuses to make any effort to study. His present teacher is so tired she refuses to have it out with him...."

At this period of Johnny's life it has been possible to make a comparison of two members of the Rocco brood, Johnny and his youngest brother, David, the boy who was suffering from anemia and on whom the mother lavished her affection. Both boys were students at the same school at this time.

At the same time that teachers were complaining so bitterly about Johnny's behaviour, teachers who had David considered him a "good, likeable child." Observers noted that though David had a violent temper and was sometimes harder to manage than Johnny, he was generally sunny, studious,

cooperative, generous, and was popular with the other children at school.

"David is a 'regular boy,' all in all," one of them stated. "He likes to play and tussle. He is very well developed and healthy looking for a congenital luetic. He looks clean and well cared for. He's quite independent, seems more sure of himself than his brother, John, and is better in his work despite frequent absences when he goes to the clinic. He has no serious fears or worries. He never does anything seriously wrong."

Undoubtedly David had less energy for mischief than Johnny, his illness (though not yet in its terminal stages) limiting the scope and intensity of his activities. But his health handicaps also brought him prestige and advantages which Johnny didn't enjoy - the demonstrated solicitude of his mother; sympathetic attention from members of the community; presents; regular vacations in the country provided by the local childrens' hospital. Doctors even prescribed that he get plenty of sweets.

Johnny, feeling himself neither loved, wanted, nor respected was forever in competition with more favored children. He was always on the look out for disparagement of himself. He was extremely sensitive about his scholastic standing. Above everything - it was his "best wish" - he wanted to be promoted. When special tests were given him at school, he assumed that was to find out "if I have any brains." He was obsessed with the fear that he would be placed in the "dummy class," thus proving once and for all, to himself, to the other children, and to the world at large, that he was different, inferior. (His IQ at eleven was 91, low average, but not so low as his scholastic achievements.) Yet Johnny didn't have the resources for concentrated effort. He was fighting on too many fronts at once.

With every new failure he became less tractable, more vindictive, and was compelled to some new misbehaviour.

"Teachers! Crumbs! Bitches!" he says. "All the way back, in the King School - Miss Smith, she was the first-grade teacher; why, as young as I was then, Jesus! Jesus! I had a special desk. Not with the other kids or anything, but right up in front near her. I was special. All my life I was something special. I found right then that I had to show off, I suppose, or be proud of it, or something -

Teachers, and the different mothers. They always pointed to me. I was the example. They'd ask the kids, 'You want to be like Sparrow Rocco?' Once when I went into a new room, at the beginning of the term, the teacher asks me, 'Is your name Rocco? I know all about you,' she says - Jesus, in front of all the kids! - 'Don't think You're not going to be good in here!' Her name was Miss Wayman, the jerk! I'd like to—.

In the class, if there was a book - you know, as it goes up the aisles, kids read from it - and they came to me, they never called my name. I'd just be sitting there like this. The guy behind me would read, or the girl in front. But not me. The teacher didn't care.

When the kids passed around the paper, to write something, it got so they just ignored me. Once a kid was passing paper, and when he came to me he asked the teacher, 'Should I give John some?' I said 'Why ask the teacher? I'm in the room, too, ain't I?' It used to get me sore. I took the paper and wrote any God damned thing on it. The teacher just looked at it and tore it up. The next time they gave me paper, I tore it into little pieces -.

Yeah-. I used to feel bad. Seems like nobody wanted me around, neither the teachers or the kids. If they could avoid having me at a party, they didn't. I never had any real good friends. Once, in school, something happened. I cried over it. I know this girl. The bitch! Bitch! Poletti. Mary Poletti. That's her name. I'm not forgetting her. It was Valentine's. She sent everybody in the room one except me. The teacher had all the kids to get up and say how many valentines they got, and to read them off and tell who they were from. I didn't get any. I was the only one. Then the teacher had little candy hearts she gave out. I didn't get one of them, either. Not because she didn't want to, but somebody, some visitor, I guess, came in, an' I was in the back or something, an' she didn't have any left. She asked me, 'You don't feel bad, not getting one?' What did she expect? That I should burst out crying and tell her? I said, 'Naw. I don't care.' Later I cried. I didn't get anything that day."

Before he was twelve, Johnny's attitudes toward society had crystallized in a hard, bitter core of rancor. He had his reasons: he had always been treated badly. He felt no one had ever loved him. Everyone was his enemy - his mother, his brothers, his teachers, the cops, even the other

kids - all were against him. Okay, he was at war with them.

That was Johnny Rocco at the age of twelve when something very important happened in his life. That year Jim O'Brien, a tall, pleasant-faced man in his middle thirties became Johnny's friend. O'Brien was a counsellor in an organization devoted to work with problem boys. Before he even approached Johnny, O'Brien had familiarized himself with the Rocco family history by talking to police, hospital and welfare authorities, and by visiting the Rocco home.

Sad Mrs Rocco, now fifty, tired and bedraggled, received him in her dingy kitchen which was festooned with lines of drying clothes. Yes, yes, she was worried about her Johnny. She "couldn't do nothing with." Only Georgie - he was twenty-one now, poor boy, and wanted to get married, but she needed him at home - only he had any control over Johnny. Johnny was at school now, but she didn't know when he would be home. Every morning, after a breakfast of bread and cocoa, he went away and didn't come back until 10 or 11 o'clock at night.

She was doing the best she could, but there was so much - the cleaning, the washing, the cooking; the worry about money for food, for rent, and coal. The Welfare Department only gave her $38.00 every two weeks for herself and the seven children. Jobs were hard to get and didn't pay much. Yet if one of her boys did get a job, whether he contributed to the family or not - and a boy had to have some spending money, she knew that - it always made trouble.

Just last month one of her boys had got a job as a messenger, $7.00 a week. Seven dollars doesn't grow on trees. If she had reported that income to the Welfare Department, they would have deducted it from her allotment. She didn't report it, but they found out, and her allotment was cut off entirely. Now the boy didn't have that job any more, but she was still being penalized. She was getting $3.00 a week less than her original allotment. It was almost better, Mrs Rocco told O'Brien, if the children didn't try to work.

Then there was David. He was having trouble with that anemia. He had to be taken to the clinic regularly for X-ray treatments. (At that time she had no idea of the seriousness of David's illness.) There was Richie,

with his retracted toes. The condition was getting worse all the time but she couldn't make him go to the clinic for help. Carlay, the only girl in the household, was sixteen now. She had bleached her hair and was staying out late nights. Only God knew what would happen to her.

It was too much, too much, Mrs Rocco cried. She was sick herself. Her teeth were bad. Her heart. Sometimes she felt so faint and dizzy she didn't think she could go on.

Mr O'Brien's friendship brought Johnny a sense of importance he had never known before. If Mr O'Brien dropped in for talks with Mrs Rocco and the other children, or performed small services for them, Johnny knew that was because Mr O'Brien was his friend.

Johnny himself was dubious about Mr O'Brien's motives sometimes. He really couldn't understand, either, why an important man like O'Brien bothered with him. Once, when Johnny had been particularly difficult and Mr O'Brien got stern, Johnny had a sneaking suspicion that O'Brien was really a cop, and was spying on him. Occasionally the thought crept into his mind that may be Mr O'Brien was trying to find out if he was crazy and wanted to "put him away." He worried about that especially after Mr O'Brien took him to a clinic for a series of special examinations and tests once, and when he learned that his mother, too, harbored that suspicion.

After he'd started winning Johnny's confidence, Mr O'Brien arranged to have Johnny attend classes in the morning at a special educational clinic, while going to public school in the afternoon. When Johnny had been at the clinic for about two months, Mr O'Brien discovered that an instructor there had given the boy a rosary and that Johnny always carried it with him. Johnny had been overheard urging another child to pray every night "because you might die before you wake up," and he had given the other child his own definition of the horrors of hell: "It's a place where you're cold and hungry all the time and you never get anything to eat."

On the strength of that manifestation of interest in religion, Mr O'Brien got Johnny a scholarship in a parochial school for he would be able to attend classes there in the afternoons while continuing to attend morning sessions at the clinic. Mr O'Brien also reasoned that Johnny's interest in religion might be an effective tool in dealing with him. In

addition, Johnny had exhausted most of the public schools available to him, and it had become increasingly clear to O'Brien that Johnny's teachers in the public school he was now attending had accumulated such a backlog of hostility for the boy that they were cynical and uncooperative. The sisters at the parochial school, given an understanding of the boy's problems, might handle him more sympathetically.

Before he had embarked on these plans, Mr O'Brien had considered a foster-home placement. Johnny, he believed, was a boy whose heredity was questionable, but who was also a victim of the worst possible environmental influences. Should he not attempt to transplant Johnny to a healthier soil? Though Johnny's feelings toward his mother were full of conflict, he was still deeply attached to her, and Mr O'Brien questioned the wisdom of severing that attachment. He could try to help the boy in the school situation, he reasoned. If Johnny could develop good behaviour and work habits at school, it was possible, O'Brien wrote in his case records, that "those adjustments would carry over in terms of a healthier outlook and satisfaction in other phases of Johnny's life."

About three months after Johnny entered the educational clinic, the clinic reported him doing well. His improvement in reading seemed to give him great satisfaction. The report noted that he had an "excellent" memory, but it also stated that Johnny would become suddenly impatient and discouraged. This seemed to occur when he was confronted with tasks like naming words in quick flash devices which demanded mental alertness. He appeared pale, tired, and tense. Perhaps fatigue was a factor in his inability to respond quickly.

A short time later the director of the clinic told Mr O'Brien that Johnny's behaviour had become so poor that she did not think she could keep him in the clinic school any longer. She now realized the boy had never really adjusted to the group. She believed that that was mainly due to the deprivations he suffered and which set him apart from the other children. Most of the children at the clinic school came from comparatively comfortable families. Johnny's clothes were different. He was aware of these differences and seemed to feel them acutely.

Despite Johnny's tumultuous emotional problems, the clinic reported, just before he left the clinic to go to the parochial school on full time, that his reading level had been raised from the second to the fourth grade.

His work in arithmetic, though weak, had improved. His spelling was still very poor.

Johnny's behaviour at the parochial school, where he remained for a year and three months - longer than he had ever stayed in any one school, followed a pattern like that he had set at the clinic. The children there came of comparatively comfortable families, too, and Johnny was troubled by the difference in his social and economic status.

"I never had clothes like the other kids," he says. "My people didn't have to pay for me. I didn't even have to pay for my books or pencils. When they'd come with the box and call the kids to put their money in, they'd never call me. The other kids got ideas about me. You know, I was different."

At times Johnny was extremely hostile to the other children in his class. He tripped them, stuck gum in their hair, broke their pencils, and crumpled their papers. He was especially cruel to the "good little kids." At other times, swinging to an opposite extreme when he yearned to be accepted as one of them, he made overtures to them. But the other children feared or shunned him.

Once, after he had been at the school for quite a while he succeeded in gathering a gang of admiring little boys around him. He reacted extravagantly. He swaggered, swore, defied school discipline. He encouraged them to break school rules, too, and incited them to trip or grab and hug girls. The sisters would have liked to see Johnny make friends, but Johnny was far from a wholesome influence and they had begun to get complaints from parents of some of the other children that Johnny was teaching boys to steal and say bad words. Johnny's gang was finally broken up.

Afterwards O'Brien learned that Johnny had been particularly difficult at home during that period, too, and that he was reporting regularly to the police because he had broken some windows. When Mr O'Brien asked about that, Johnny burst out: "What am I gonna do? If I play with the big kids they get me in trouble. If I play with the little kids, I get them in trouble. What am I gonna do?"

Johnny hadn't been in parochial school long when Mr O'Brien realized

that immersion in this religious atmosphere served merely to increase Johnny's anxieties and conflicts. That was revealed as a result of the following incident: One morning Johnny appeared in his classroom wearing a bracelet to which a religious medal was attached. It was exactly like some others which were on exhibit on a small table in the church. A day or two before, two altar boys had seen Johnny kneeling in prayer beside that table, and the sisters had noticed that some of the thumb tacks holding the cellophane that covered some of the religious trinkets had been removed.

When the sisters saw Johnny wearing the bracelet they expressed the suspicion, among themselves, that Johnny had stolen it. But no one accused him of the theft. Later that day, when Johnny was sent to the office of the Sister Superior on some errand, she admired the bracelet and asked him where he had gotten it. Johnny flew into a rage.

"You think I stole it, don't you?" he asked.

The Sister Superior said, no, she didn't believe in accusing someone of something she couldn't prove.

"But you know I would steal it, don't you?" he insisted.

"I know no such thing," she said.

"Well, I would, I would," Johnny said. "You know I would. You think I'm a crook, don't you? Everybody knows I'm a crook. I'm even a worse crook than you think I am," he told her. "I'm worse than everybody says. I steal on the outside. Don't think I wouldn't steal in church, too. I'm no good. Everybody says I'm no good."

His family had been nagging and yelling at him, he went on. They kept "throwing it up" at him that he was the only one of them who had ever gotten a "break." He went to a Catholic school, and still was no good. "Okay. I'm a crook. I'm no good," Johnny said. "I'm not going to church any more. Anyway, the church is a fake."

Then Johnny told the sister something which was, perhaps, the greatest reason for his need to repudiate the church. He had committed a sin which was so terrible he hadn't been able to face going to confession for six or

seven months. A couple of months ago he'd become so worried and upset about this sin that he'd forced himself to go to confession. He'd started by telling the priest that he hadn't been to confession for a long time. The priest became angry. "Are you one of those boys from the parochial school?" he asked. When Johnny said, "Yes," the priest, Johnny claimed, violated the secrecy of the confessional. He had asked Johnny to give his name; then, ordering him out of the booth, he told him, in future, he was to come to confession regularly, and whenever he came he was to give his name. He would never go back. "Never!" Johnny declared. A priest wasn't supposed to ask who you were. Confession was between you and God. No priest need expect him to go in there and identify himself and then tell him all his sins. But, just the same, the awful, unconfessed sin weighed heavily on him.

During this period Johnny was having similar troubles at the neighborhood settlement house where Mr O'Brien had encouraged him to go for after-school and evening recreation. Johnny never felt that he was welcome there. He made himself extremely unpopular by harrassing the other children. He was especially hostile to the good children, who made a great point of avoiding him. He also antagonized settlement-house workers by intruding into classes and club rooms where he didn't belong. He'd been asked to leave the settlement house several times, but he kept returning. He deliberately committed acts of vandalism. Once he emptied a bottle of ink on a desk, then rubbed the ink into the wood with some gravel and stones he'd brought with him. On another occasion he pulled all the notices from a bulletin board and tore them into little pieces. One day he walked into a meeting of Girl Scouts and broke up their gathering by exposing his genitals. When one of the workers caught him, Johnny said a boy in his gang had shown him that trick. Johnny was sent to bring the boy to the settlement house. A half-hour later he returned with a small army of urchins and they stormed the building with bricks and stones. The police had to be called.

Mr O'Brien interceded with the police and persuaded them not to take any official action on condition that Johnny would never return to the settlement house. A few weeks later, though, Johnny went back. He was treated coldly, but was permitted to stay as long as he bothered no one. Gradually, starting in little ways, he began to misbehave again. One evening Johnny went into the office of the settlement house director where she had visitors. She ordered him out. A few minutes later, he poked his

head inside the door again. He was again asked to go away. After the third time Johnny was put out of the building and the outside door locked. Johnny began kicking and throwing himself against the door as if to break it in. When one of the workers came to chase him, Johnny slipped in through the open door, ran to the center of the room, and threw himself on the floor. He had to be carried out bodily.

Johnny was nearly thirteen when the Sister Superior told Mr O'Brien Johnny would have to leave the parochial school. Two or three times before she had yielded to Johnny's pleas for one more chance, but now she had come to a decision. It was final, not because of any new outbreak by Johnny, but for the sake of the school, and because she had become convinced that all her efforts, Mr O'Brien's efforts, and the boy's efforts were in vain so long as he remained in his present home and environment.

She realized that Johnny's road to self-improvement was made immensely more rough because everyone - the police, the parents of the other children, and the children themselves, condemned him so much that it amounted to persecution.

The police picked Johnny up for questioning at any hour of the day or night about any delinquencies that occurred in the neighborhood. It didn't matter whether there was direct evidence against him - he was a target of suspicion.

The next month Johnny left the parochial school and went back to public school. During his first months at the public school Johnny's teachers found that he was making a tremendous effort to behave, but that he was "like a kettle of boiling water with the lid about to blow off."

Johnny managed to get through that term at school without too much trouble, but school hadn't been out long before he fell into trouble with the police again, this time for breaking into a house with two other boys and stealing fifty dollars worth of jewelry. Before he appeared in court Mr O'Brien visited him. Johnny, O'Brien reported, seemed "unhappy, but stolid and apathetic, though once or twice, as we talked, he verged on tears."

Johnny didn't deny the theft. The jewelry, he said, had been taken to the widow Hatfield, a neighborhood woman whose eighteen-year-old crippled

son, who pushed himself about on a cart, was leader of a gang of smaller children. Mrs Hatfield had told Johnny and the other boys that the jewelry was brass, not gold, but had given them a nickel apiece for it.

Mrs Hatfield had lived in the neighborhood for years, Johnny went on. Her place was a kind of hang-out. There was always a gang of kids hanging around. He got to know her, a long time ago, when she'd called him into her house through a window and given him lunch with her son. Within a week he'd stolen a flashlight for her. He'd stolen lots of other things for her after that.

At Johnny's hearing, late in August, Mr O'Brien discussed Johnny's case with the judge and suggested that Johnny be sent to a state-supervised foster home instead of to a school for delinquents. A police officer who had known Johnny for years and had noted the improvement in his behaviour during recent months also spoke for him. Johnny was sent to one of three temporary homes in the neighboring town of Baldwin, where delinquents were placed until more permanent arrangements could be made for them. This was the strictest of the three homes and Johnny was sent there because he was the toughest looking of a group of boys who were being committed that day. Mr O'Brien, knowing how Johnny responded to discipline, anticipated trouble but there seemed to be no alternative solution.

A few days after Johnny's arrival at the home he ran away after becoming involved in a series of thefts from parked cars, along with two older boys from the home. In court, at Baldwin, Johnny cried continuously for three-quarters of an hour. He had been treated roughly, he said, had been glared-at at the table and whipped for picking grapes from the vines in the yard. He hadn't wanted to stay in the place so he had committed the thefts in the hope that he would be transferred immediately. Then he had become frightened and ran away.

The judge who heard the case ruled that Johnny had not yet had a fair trial at foster-home placement, and, recommending that another home be tried, returned him to the juvenile authorities in his own town. Early in September Johnny was sent to a second temporary foster home run by Mrs Baker.

Johnny stayed at Mrs Baker's for nearly two months while more permanent arrangements were being made for him. Except for a flurry of poor

behaviour during the first few days, Mr O'Brien reported "an amazing change for the better in his personality and behaviour." Mrs Baker, whom O'Brien described as a "very loving, affectionate woman who doesn't resort to measures of strict discipline," didn't send Johnny to school with the other children during his first two weeks there because she thought any day he would be transferred to another home. Mornings, Johnny stayed at her side, helping her with the household chores. In the afternoons, he went to a park nearby to watch the ball games.

Mrs Baker was touched profoundly by the thin, tough-looking ragamuffin, Johnny, whose brittle surface seemed to melt under the warmth of attention. When he ate voraciously, she ignored his manners and praised him for his good appetite. Johnny exclaimed, "I never had such good things to eat."

Johnny had never been in such an attractive place, either. He noticed the flowered cretonne curtains on the windows, the bright oilcloth on the table where meals were served, the potted plants scattered lavishly through all the rooms. He was outraged once when one of the boys spit in a flower pot. Mrs Baker remarked: "I've never had a boy who seemed so impressed with little touches of beauty."

Sometimes Mrs Baker kissed him. He still squirms with pleasure and embarrassment as he recalls this. "She used to kiss me in front of everybody. I used to be embarrassed. She was all right. She was nice to me."

When the State gave Johnny some clothes - a suit, underwear, and shoes, and Mrs Baker added two brightly colored lumber jackets - Johnny was beside himself. His happiness was complete when on Sunday afternoons, well fed, well scrubbed, and well dressed, and with the money that Mrs Baker gave him jingling in his pocket because he was such a good boy, he started for the movies. He was happy and incredulous, too, because he was getting along with the other children. "I guess they like me," he told O'Brien.

When Mrs Baker finally sent Johnny to the neighborhood school, Johnny got along perfectly. His teacher, who sensed his need for importance, asked him to help a smaller, badly retarded youngster with his lessons. Johnny took great pains with his charge. "He ain't dumb outside school," he told Mrs Baker. "He knows how to get along, and the kids like him. But his lessons - well, I keep trying and trying to explain it to him, but I

can't get it in his head. If I tell him six apples and six apples is twelve apples, and then I asked him another question, about may be, eight bananas, he always gives me the answer I told him before, 'twelve apples'. I try my best, but like I tell the teacher, there's some kids that just can't seem to learn."

Johnny went back to the place he liked so much but within two weeks an official order came that he was to be transferred to a farmhouse on the out-skirts of town. Mrs Baker and Mr O'Brien both tried to have the order rescinded, pointing out to the authorities the wonderful progress Johnny had made and how well he had become adjusted to life. But their pleas were ignored. A change would disrupt established routines, they were told. Mrs Baker's home was not an approved foster home for permanent placements. Johnny had been placed there on a temporary basis. The authorities argued also that the steady flow of delinquent boys through Mrs Baker's temporary home would prove upsetting to Johnny.

Within three days of the time Johnny arrived at his new home on the farm he had been whipped for breaking a house rule and run away. He was returned to Mrs Baker's while the situation was being investigated, but this time almost immediately ran away from Mrs Baker's, too, with another delinquent boy who had recently been placed with Mrs Baker on a temporary basis. On the morning after his disappearnce from Mrs Baker's Johnny turned up at the police station in his own neighborhood. He pleaded to be permitted to stay at home. He knew he had been a bad boy, he said. He did not want to be bad ever again. If they would only give him a chance, he'd never get into trouble again. Please, would they let him try?

A police sergeant took Johnny before the judge who had originally sent him to the foster home. Johnny made a very good impression. Before he was through, the judge was smiling and nodding. He placed Johnny on probation and sent him home.

Johnny didn't go straight home from the court. He went to school where he had been a student before his arrest and asked to be re-admitted. He made a good impression there too, and was permitted to go to his class. Later that day, when Mr O'Brien learned of what had happened, he went to the school and he, Johnny, and the principal had a long talk. Johnny told them about the school near Mrs Baker's where he had gotten along so well.

At that school, he said, because it was so hard for him to "get" the lessons in the regular classes, he had been given a lot of "handwork" to do. He had done that well. He didn't want to go on being "dumb" in his classes. Would it be possible for him to be transferred to the vocational school where the work consisted of "handwork"?

The principal pointed out that a boy had to be fourteen to go to vocational school and that Johnny wouldn't be fourteen for several months. In addition, vocational school work required at least a sixth-grade education. Johnny was only in the fourth. In Johnny's case though, the principal said, every effort would be made to arrange it. Perhaps there Johnny would find a niche into which he would fit more comfortably. In the meantime, Johnny was to go back to his regular classes.

Johnny made a brave start at being a good boy. During several visits to the Rocco home following this discussion, Mr O'Brien learned that, though the Roccos were beset with many troubles, Johnny for the first time had no part in them. Mrs Rocco reported he was helping around the house, that he wasn't staying out late at nights, and that he was not associating with the known bad boys of the neighborhood. Johnny's school and his probation officer also gave good reports of his conduct.

But, like the bright lumber-jackets he had brought back from Mrs Baker's, Johnny's brave resolutions soon became worn and dingy: he was again swallowed up in the old familiar conditions. He became nervous and surly. The bags came back under his eyes. What little sense of dignity he had acquired disappeared.

When the day of his entry into vocational school came Johnny was miserable in mind and body. His head was twisted to one side because of three large boils which had developed on the side of his neck, and a badly infected finger had caused a pus-pocket to form in one of his arm pits but he had not seen a doctor. He had not been in school for more than a few days when he realized that here, too, he was to be "the big jerk."

In August of that year, when Johnny was fourteen and a half, he and another boy robbed a store. They were caught by police as they left with the stolen goods and Johnny was sent to a reform school, where he remained for six months. During his first month there his conduct was so stormy he

was placed in the "disciplinary cottage".

His conduct, for the remainder of his term, was beyond reproach. He earned the maximum number of credits for good work and conduct, lost none for infractions of rules. O'Brien noticed striking changes for the better in Johnny's appearance. He had gained height and weight, held himself straighter, and seemed generally more attractive. But his perfect behaviour, according to Johnny, didn't grow out of miraculously achieved habits of relaxation.

"In Hartford School, Jesus Christ, how I suffered. I suffered, an' I mean, I suffered," Johnny says fiercely. "I was good all right. That was 'cause I didn't even let myself breathe. The work part, that was all right," he goes on. "I could move around an' I was away from the masters an' the other kids. I wanted to be away from everybody. I was afraid if I mixed with someone I might do something - lose my temper, or do something wrong.

The evening. That was the worst time," Johnny continues. "In the evening when I would go back to the cottage, the kids would be jumping around.... fellas playing cards an' things. They'd say, 'Come on an' play'. I wouldn't. I just kept my mouth shut. I would just fold my arms, and I would leave my arms folded, an' I wouldn't even move. I was in misery, but I was scared. I had to have the points to get out of there. I had to get out of there, that's all. I can't stand being cooped up anywhere."

When Johnny was fifteen and a half, Mr O'Brien found him a job as a truck driver's helper, and Johnny got an official release from further attendance at school. He was overjoyed. It seemed to him this job was less menial than anything he had ever done, and it would give him a certain freedom. He never could stand "being cooped up". Finally, the salary was to be $15.00 a week, a lordly sum to Johnny. He would be able to help at home, to buy some clothes, and have a little money in his pocket besides.

O'Brien went with Johnny for his final interview about the job on a Saturday afternoon. Johnny was told to report for work on Monday morning. "Never have I seen this boy as happy and yet so poised, calm, and sure of himself," O'Brien said. "When I left him on his corner after the interview he was enthusiastically telling a group of boys of his age about his good luck."

But on Monday morning Johnny was in jail. Sunday night, with another boy, he had broken into a store near his home and stolen $21.00

Summary of Johnny Rocco

Johnny Rocco was born in a slum, in a poor family with ten children, where the father was a drunkard, who used to attack his family when drunk, and the mother suffered from heart disease. When Johnny was five, his father died, and one of Johnny's brothers, Georgio, disciplined the younger children when necessary by beating them brutally.

Johnny felt neglected at home because his younger brothers were ill, and they had to be given more attention than he got.

Outside home, Johnny suffered because he came from a notorious family and people treated him accordingly. He did not do very well at school, and was disliked both by teachers and children.

When Johnny was twelve, a social worker, O'Brien, tried to help him. Mr O'Brien considered the possibility of placing Johnny in another environment, but decided against it because Johnny was attached to his mother.

Johnny became interested in religion, and O'Brien placed him in a religious school. Inspite of the trouble he had, he managed to stay there for more than a year. Eventually, he got disappointed with religion after a priest tried to get Johnny's identity when he came for confession.

After being sent away from school, Johnny was trialed for theft, and sent to a state supervised foster home; he ran away from the first place and the judge ordered another place to be tried. Temporarily, Johnny was placed with Mrs Baker. There was a marked improvement in his behaviour here, but the authorities removed him from there. He ran away from the place where he was placed in next, and ran away from Mrs Baker after he had been returned to her. He persuaded the authorities to let him stay at home, and after a short quiet period he had to be sent to a reform school because he stole. After giving some trouble and being punished severly in the disciplinary cottage there, he behaved well. However, he was extremely unhappy at this school all the time.

After some further events, when Johnny was fifteen and a half, he was going to get a job which he wanted very much, but just before starting the

new job he was caught stealing.

The question is what should be done about him, should he be punished or should he be given the love he needs.

Appendix 7

Oral Instructions to the Questionnaires

As it says on the first page of this questionnaire, it is part of a project on judgment of relevance. You can read the rest of the page later.

If you will have a look at the next pages, you will see that there are eight pages, divided into four groups of two pages each: there is a full page followed by a page that is not full on which there are eight numbered sentences with spaces in front of them. Each group of two pages is one item in this questionnaire. You didn't all get the same questionnaire.

The first page of each of the items contains instructions. It starts with the words "In the course of discussion between two people on the question...." and afterwards the theme of the discussion is given: it is underlined (examples: should Britain stay in CM? What should be done about Johnny? Do universities fulfil their function?). Afterwards you are given a sentence that I have taken from such a discussion. This will differ in different items. It is also underlined.

If you now have a look at the second page you will see eight different sentences. Each of them could be uttered after the sentence given earlier. The question I want you to answer is how relevant each of them would be if it followed the sentence on the first page (how relevant is it as a way of continuing it).

On the first page there are instructions as to how to answer this question. You are to answer it by assigning a number between 1 and 10 that will reflect your judgment. For some items 1 will be most relevant and 10 least relevant, and the other way round for others. Please pay close attention to the direction of the scale in each item. It is always underlined.

When making the judgment some of you are requested to imagine that the utterance was made by the same speaker and others that it was made by the other speaker. Try to pay attention to the question who made the utterance.

Taking all this information into account (sentence, variant, speaker, direction of scale), you are to read the sentence, then the first variant, think how relevant it would be if it came after the first sentence, translate your judgment into a number between 1 and 10 taking into account the direction of the scale, and write the number in front of the variant. Do the same for the rest of the variants, and then move to the second item, and so on. Try to give your first reaction as much as possible. You can change things as you proceed.

Please answer all items and all variants. You can comment on things in addition to answering the questions. If there are any problems please ask me about them.

Appendix 7a

The questionnaires of the third experiment

In this Appendix the items of the questionnaire are presented. To the right of each of the variants a number from 1 to 8 is given in brackets. This number identifies the variant as belonging to one of the right types of variants listed on page 124. For example, if a variant is marked as (1), the referent, dimension, and value were all kept constant in the construction of this variant; if it is marked as (2), the referent and the dimension were kept constant whereas the value was changed, and so forth for the other types of variant.

A detailed example of how the variants were constructed is presented below. The discussion refers to the item on pp. 227-228.

The utterance is: "I think that coming out is a pre-requisite for a fundamental change in Britain". The referent of this utterance is 'coming out', the dimension is that of consequences and the value is the specific consequences, namely, a fundamental change in Britain. The variants for this utterance are briefly discussed below. The variants are discussed in the order in which the types to which they belong are listed on page 124:

1. The referent, dimension, and value have to be kept constant. One constructs this variant by repeating or paraphrasing the original utterance. The third variant in the example considered belongs to this category.

2. This variant involves a change of value only. In our example a different consequence of the referent has to be supplied. The value that it is given in the example (variant 2) is 'regaining our sovereignty'.

3. This variant involves a changed in dimension only. It is difficult to construct variants in which the dimension is changed but the value is kept constant since these demands are almost contradictory. It was attempted to overcome this difficulty by choosing a dimension that is

similar to the dimension in the original utterance. It is doubtful whether I have been successful in constructing such variants. In our example in the sixth variant it was attempted to express the value given in the original utterance on the dimension of action.

4. This variant (8 in our example) involves a changed of dimension and value, while the referent remains the same. In our example the dimension is changed to that of the manner of occurrence of the referent and its value is 'gradually'.

5. In this type of variant the referent has to be changed and the other two factors remain unchanged. In our example in variant 7 the referent has been changed from 'coming out' to 'hard work'.

6. In this type of variant only the dimension remains the same and the other two factors are changed. In the fourth variant in the example considered the referent has been changed to 'the success of each member country' and the value on the dimension of consequences has been changed to 'the success of the community as a whole'.

7. The problem raised in the discussion of the third variant applies to this one as well. Here we have to change the referent and the dimension and keep the value constant. In our example in variant 1 the referent has been changed to 'working hard', the dimension to that of purpose or aim, but it was attempted to keep the value the same as that of the original utterance.

8. In the fifth variant in our example the referent, dimension, and value have all been changed. The referent has been changed to tariffs, the dimension to action, and the value is also different.

Questionnaire

This questionnaire is part of a project on the judgment of relevance. You will be asked to judge the relevance of different ways of continuing four utterances that have been selected from a discussion. Study the instructions carefully, paying special attention to the direction of the scale of judgment because this may vary for different sets of utterances.

Please make sure you answer all the questions and rate all variants. Comments and suggestions are welcome but please give them in addition to answering the questions set.

Thank you for your co-operation.

In the course of a discussion between two people on the question 'Should Britain remain in the Common Market?' the following utterance was made:

"A common agricultural policy exploits people"

On the next page is a list of eight sentences, each of which might have continued the discussion after the utterance above. You are requested to rate them in terms of their comparative relevance to the discussion by assigning to each of them a number between 1 and 10 that will reflect your judgment: 1 is most/least relevant and 10 is most/least relevant. You are allowed to use each number more than once, but try to use as many of them as possible.

Read the utterance at the top of the page, then read the first possibility of continuing the discussion. Imagine that this is what the same/other speaker went on to say, try to think how relevant it would be, translate your judgment into a number between 1 and 10, and then write down the number in the space in front of the variant. Then read the top utterance again, this time imagine that it was followed by the second variant made by the same/other speaker, judge how relevant this way of continuing the discussion would be, and write a number according to your judgment in the space in front of the second variant. Proceed in the same way until you have rated all variants. You are allowed to change your mind about your judgment, but try to give your first reaction as much as possible. It does not matter whether you actually agree with what is said in the discussion.

PLEASE MAKE SURE YOU RATE ALL VARIANTS

1. _____ Britain pays taxes to the community. (6)

2. _____ It's a bit difficult to understand. (4)

3. _____ Capitalism exploits people. (5)

4. _____ It increases the prices of goods coming from abroad. (2)

5. _____ NATO has been going since 1948. (8)

6. _____ Capitalism means that some people get rich at the expense of others. (7)

7. _____ A common agricultural policy exploits people. (1)

8. _____ Exploitation is bound to follow from a common agricultural policy. (3)

In the course of a discussion between two people on the question 'Should Britain remain in the Common Market?' the following utterance was made:

"I think that coming out is a pre... prerequisite for a fundamental change in Britain"

On the next page is a list of eight sentences, each of which might have continued the discussion after the utterance above. You are requested to rate them in terms of their comparative relevance to the discussion by assigning to each of them a number between 1 and 10 that will reflect your judgment: 1 is most/least relevant and 10 is most/least relevant. You are allowed to use each number more than once, but try to use as many of them as possible.

Read the utterance at the top of the page, then read the first possibility of continuing the discussion. Imagine that this is what the same/other speaker went on to say, try to think how relevant it would be, translate your judgment into a number between 1 and 10, and then write down the number in the space in front of the variant. Then read the top utterance again, this time imagine that it was followed by the second variant made by the same/other speaker, judge how relevant this way of continuing the discussion would be, and write a number according to your judgment in the space in front of the second variant. Proceed in the same way until you have rated all variants. You are allowed to change your mind about your judgment, but try to give your first reaction as much as possible. It does not matter whether you actually agree with what is said in the discussion.

PLEASE MAKE SURE YOU RATE ALL VARIANTS

1. ____ The aim of working hard is to bring about a fundamental change in Britain. (7)

2. ____ Coming out is a prerequisite for re-gaining our sovereignty. (2)

3. ____ I think that coming out is a prerequisite for a fundamental change. (1)

4. ____ The success of each member country is a precondition for the success of the community as a whole. (6)

5. ____ Tariffs increase the price of goods coming from third world countries. (8)

6. ____ Coming out will give Britain the freedom to bring about a change. (3)

7. ____ Hard work is a precondition for a fundamental change in Britain. (5)

8. ____ Coming out can be done gradually. (4)

In the course of a discussion between two people on the question 'Should Britain remain in the Common Market?' the following utterance was made:

"Well.... the kind of sovereignty we are talking about I mean it's economic"

On the next page is a list of eight sentences, each of which might have continued the discussion after the utterance above. You are requested to rate them in terms of their comparative relevance to the discussion by assigning to each of them a number between 1 and 10 that will reflect your judgment: 1 is most/least relevant and 10 is most/least relevant. You are allowed to use each number more than once, but try to use as many of them as possible.

Read the utterance at the top of the page, then read the first possibility of continuing the discussion. Imagine that this is what the same/other speaker went on to say, try to think how relevant it would be, translate your judgment into a number between 1 and 10, and then write down the number in the space in front of the variant. Then read the top utterance again, this time imagine that it was followed by the second variant made by the same/other speaker, judge how relevant this way of continuing the discussion would be, and write a number according to your judgment in the space in front of the second variant. Proceed in the same way until you have rated all variants. You are allowed to change your mind about your judgment, but try to give your first reaction as much as possible. It does not matter whether you actually agree with what is said in the discussion.

PLEASE MAKE SURE YOU RATE ALL VARIANTS

1. _____ The common market tries to improve countries' economic position. (7)

2. _____ No, we are talking about political sovereignty. (2)

3. _____ We are discussing a specific kind of sovereignty, economic sovereignty. (3)

4. _____ We are talking about economic sovereignty now. (1)

5. _____ Socialism applies to all aspects of life. (6)

6. _____ Capitalism carries the seeds of its own destruction. (8)

7. _____ Sovereignty means self-government and independence in foreign affairs. (4)

8. _____ The common market is an economic body. (5)

In the course of a discussion between two people on the question 'Should Britain remain in the Common Market?' the following utterance was made:

"The country can't support itself without being part of the market"

On the next page is a list of eight sentences, each of which might have continued the discussion after the utterance above. You are requested to rate them in terms of their comparative relevance to the discussion by assigning to each of them a number between 1 and 10 that will reflect your judgment: 1 is most/least relevant and 10 is most/least relevant. You are allowed to use each number more than once, but try to use as many of them as possible.

Read the utterance at the top of the page, then read the first possibility of continuing the discussion. Imagine that this is what the same/other speaker went on to say, try to think how relevant it would be, translate your judgment into a number between 1 and 10, and then write down the number in the space in front of the variant. Then read the top utterance again, this time imagine that it was followed by the second variant made by the same/other speaker, judge how relevant this way of continuing the discussion would be, and write a number according to your judgment in the space in front of the second variant. Proceed in the same way until you have rated all variants. You are allowed to change your mind about your judgment, but try to give your first reaction as much as possible. It does not matter whether you actually agree with what is said in the discussion.

PLEASE MAKE SURE YOU RATE ALL VARIANTS

1. _____ A lot of other European countries couldn't support themselves outside the market. (5)

2. _____ Britain has to be part of the market in order to support itself. (3)

3. _____ This country can't support itself without being part of the market. (1)

4. _____ Italy is part of the market because it cannot support itself otherwise. (7)

5. _____ Tariffs put up the prices of goods coming from third world countries. (6)

6. _____ Britain will be in a stronger position as a result of North Sea oil. (2)

7. _____ Germany is the most productive country in the community. (8)

8. _____ The country is a member of NATO too. (4)

Questionnaire

This questionnaire is part of a project on the judgment of relevance.

You will be asked to judge the relevance of different ways of continuing four utterances that have been selected from a discussion. Study the instructions carefully, paying special attention to the direction of the scale of judgment because this may vary for different sets of utterances.

Please make sure you answer all the questions and rate all variants. Comments and suggestions are welcome but please give them in addition to answering the questions set.

Thank you for your co-operation.

In the course of a discussion between two people on the question '<u>Do universities fulfil their functions</u>?' the following utterance was made:

"<u>.... to get back to the.... societies point of view you've all your political groups.... certainly</u>"

On the next page is a list of eight sentences, each of which might have continued the discussion after the utterance above. You are requested to rate them in terms of their comparative relevance to the discussion by assigning to each of them a number between 1 and 10 that will reflect your judgment: <u>1 is most/least relevant and 10 is most/least relevant</u>. You are allowed to use each number more than once, but try to use as many of them as possible.

Read the utterance at the top of the page, then read the first possibility of continuing the discussion. Imagine that this is what the <u>same/other</u> speaker went on to say, try to think how relevant it would be, translate your judgment into a number between 1 and 10, and then write down the number in the space in front of the variant. Then read the top utterance again, this time imagine that it was followed by the second variant made by the <u>same/other</u> speaker, judge how relevant this way of continuing the discussion would be, and write a number according to your judgment in the space in front of the second variant. Proceed in the same way until you have rated all variants. You are allowed to change your mind about your judgment, but try to give your first reaction as much as possible. It <u>does not</u> matter whether you actually agree with what is said in the discussion.

PLEASE MAKE SURE YOU RATE <u>ALL</u> VARIANTS

1. _____ The societies include groups interested in things other than politics as well. (2)

2. _____ The societies consist of groups representing all political points of view. (3)

3. _____ All political points of view are represented in the societies. (1)

4. _____ The total budget for this university this year is £15.5m (8)

5. _____ There are hundreds of societies in the university. (4)

6. _____ You can find any shade of political opinion among the lecturers. (5)

7. _____ Students come from a vast range of backgrounds. (6)

8. _____ One finds all political points of view represented among the lecturers and professors because they were students once. (7)

In the course of a discussion between two people on the question '<u>Do universities fulfil their functions</u>?' the following utterance was made:

"<u>.... your life style changes completely....</u>"

On the next page is a list of eight sentences, each of which might have continued the discussion after the utterance above. You are requested to rate them in terms of their comparative relevance to the discussion by assigning to each of them a number between 1 and 10 that will reflect your judgment: <u>1 is most/least relevant and 10 is most/least relevant</u>. You are allowed to use each number more than once, but try to use as many of them as possible.

Read the utterance at the top of the page, then read the first possibility of continuing the discussion. Imagine that this is what the <u>same/other</u> speaker went on to say, try to think how relevant it would be, translate your judgment into a number between 1 and 10 and then write down the number in the space in front of the variant. Then read the top utterance again, this time imagine that it was followed by the second variant made by the <u>same/other</u> speaker, judge how relevant this way of continuing the discussion would be, and write a number according to your judgment in the space in front of the second variant. Proceed in the same way until you have rated all variants. You are allowed to change your mind about your judgment, but try to give your first reaction as much as possible. It <u>does not</u> matter whether you actually agree with what is said in the discussion.

PLEASE MAKE SURE YOU RATE <u>ALL</u> VARIANTS

1. _____ The term life style is an abstract concept. (4)

2. _____ Your style of life changes completely at university. (1)

3. _____ You eat things you didn't eat before. (7)

4. _____ Lectures have become more liberal in the 20th century. (6)

5. _____ You have a different life style at university. (3)

6. _____ Your life style gets duller and narrower. (2)

7. _____ Students tend to show off a lot. (8)

8. _____ Your diet changes completely. (5)

In the course of a discussion between two people on the question 'Do universities fulfil their functions?' the following utterance was made:

"..... the lecturers and professors are appointed because they've..... because they have written so many books on it."

On the next page is a list of eight sentences, each of which might have continued the discussion after the utterance above. You are requested to rate them in terms of their comparative relevance to the discussion by assigning to each of them a number between 1 and 10 that will reflect your judgment: 1 is most/least relevant and 10 is most/least relevant. You are allowed to use each number more than once, but try to use as many of them as possible.

Read the utterance at the top of the page, then read the first possibility of continuing the discussion. Imagine that this is what the same/other speaker went on to say, try to think how relevant it would be, translate your judgment into a number between 1 and 10, and then write down the number in the space in front of the variant. Then read the top utterance again, this time imagine that it was followed by the second variant made by the same/other speaker, judge how relevant this way of continuing the discussion would be, and write a number according to your judgment in the space in front of the second variant. Proceed in the same way until you have rated all variants. You are allowed to change your mind about your judgment, but try to give your first reaction as much as possible. It does not matter whether you actually agree with what is said in the discussion.

PLEASE MAKE SURE YOU RATE ALL VARIANTS

1. _____ The administrators are given jobs because they have proved themselves to be efficient. (6)

2. _____ When graduates are given jobs as advisors to organizations it is because they've written books on relevant topics. (5)

3. _____ Graduate advisors to various organizations are people who have written books in their area of speciality. (7)

4. _____ University lecturers and professors have lists of the books they have written. (3)

5. _____ They are appointed because they teach well. (2)

6. _____ There is a huge number of professors and lecturers in this country. (4)

7. _____ Lecturers and professors in universities are appointed according to the amount they have published. (1)

8. _____ Students develop independence by themselves. (8)

In the course of a discussion between two people on the question '<u>Do universities fulfil their function?</u>' the following utterance was made:

"<u>I think that may be one of the ideas behind this system, you know, where it's just a limited amount of tutorials may be to teach a personal discipline</u>"

On the next page is a list of eight sentences, each of which might have continued the discussion after the utterance above. You are requested to rate them in terms of their comparative relevance to the discussion by assigning to each of them a number between 1 and 10 that will reflect your judgment: <u>1 is most/least relevant and 10 is most/least relevant</u>. You are allowed to use each number more than once, but try to use as many of them as possible.

Read the utterance at the top of the page, then read the first possibility of continuing the discussion. Imagine that this is what the <u>same/other</u> speaker went on to say, try to think how relevant it would be, translate your judgment into a number between 1 and 10, and then write down the number in the space in front of the variant. Then read the top utterance again, this time imagine that it was followed by the second variant made by the <u>same/other</u> speaker, judge how relevant this way of continuing the discussion would be, and write a number according to your judgment in the space in front of the second variant. Proceed in the same way until you have rated all variants. You are allowed to change your mind about your judgment, but try to give your first reaction as much as possible. It <u>does not</u> matter whether you actually agree with what is said in the discussion.

PLEASE MAKE SURE YOU RATE <u>ALL</u> VARIANTS

1. _____ Having a limited amount of tutorials leads you to learn personal discipline. (3)

2. _____ The university system doesn't provide enough opportunities for learning. (4)

3. _____ The aim of examinations is to make sure that the students study. (6)

4. _____ There is a crisis in our whole system of education. (8)

5. _____ It is the function of the family to teach personal discipline. (5)

6. _____ The purpose of having a limited amount of tutorials may be to develop one's creativity. (2)

7. _____ The idea behind this system, where the amount of tutorials is limited, is to teach personal discipline. (1)

8. _____ Parents teach personal discipline. (7)

Questionnaire

This questionnaire is part of a project on the judgment of relevance. You will be asked to judge the relevance of different ways of continuing four utterances that have been selected from a discussion. Study the instructions carefully, paying special attention to the direction of the scale of judgment because this may vary for different sets of utterances.

Please make sure you answer all the questions and rate all variants. Comments and suggestions are welcome but please give them in addition to answering the questions set.

Thank you for your co-operation.

In the course of a discussion between two people on the question 'What should one do about Johnny' (where Johnny is a juvenile delinquent whose case history is being discussed), the following utterance was made:

"It seems as if he's.... you know.... he just sort of.... all round him has been so frustrated and...."

On the next page is a list of eight sentences, each of which might have continued the discussion after the utterance above. You are requested to rate them in terms of their comparative relevance to the discussion by assigning to each of them a number between 1 and 10 that will reflect your judgment: 1 is most/least relevant and 10 is most/least relevant. You are allowed to use each number more than once, but try to use as many of them as possible.

Read the utterance at the top of the page, then read the first possibility of continuing the discussion. Imagine that this is what the same/other speaker went on to say, try to think how relevant it would be, translate your judgment into a number between 1 and 10, and then write down the number in the space in front of the variant. Then read the top utterance again, this time imagine that it was followed by the second variant made by the same/other speaker, judge how relevant this way of continuing the discussion would be, and write a number according to your judgment in the space in front of the second variant. Proceed in the same way until you have rated all variants. You are allowed to change your mind about your judgment, but try to give your first reaction as much as possible. It does not matter whether you actually agree with what is said in the discussion.

PLEASE MAKE SURE YOU RATE ALL VARIANTS.

1. _____ Delinquency is caused by frustration. (7)

2. _____ A social worker is usually someone who went to university after leaving school, and took a degree in social work. (6)

3. _____ It seems as if he has been treated gently by some people. (2)

4. _____ Sadness has always existed. (8)

5. _____ He seemed to like birds. (4)

6. _____ A lot of juvenile delinquents have a history of frustration. (5)

7. _____ Johnny developed into a delinquent because he was so frustrated. (3)

8. _____ It seems as if he's had a history of frustration. (1)

In the course of a discussion between two people on the question 'What should one do about Johnny' (where Johnny is a juvenile delinquent whose case history is being discussed), the following utterance was made:

"He liked to have.... he liked birds.... that's the one thing he liked...."

On the next page is a list of eight sentences, each of which might have continued the discussion after the utterance above. You are requested to rate them in terms of their comparative relevance to the discussion by assigning to each of them a number between 1 and 10 that will reflect your judgment: 1 is most/least relevant and 10 is most/least relevant. You are allowed to use each number more than once, but try to use as many of them as possible.

Read the utterance at the top of the page, then read the first possibility of continuing the discussion. Imagine that this is what the same/other speaker went on to say, try to think how relevant it would be, translate your judgment into a number between 1 and 10, and then write down the number in the space in front of the variant. Then read the top utterance again, this time imagine that it was followed by the second variant made by the same/other speaker, judge how relevant this way of continuing the discussion would be, and write a number according to your judgment in the space in front of the second variant. Proceed in the same way until you have rated all variants. You are allowed to change your mind about your judgment, but try to give your first reaction as much as possible. It does not matter whether you actually agree with what is said in the discussion.

PLEASE MAKE SURE YOU RATE ALL VARIANTS.

1. _____ Mr O'Brien, the social worker liked Johnny. (6)

2. _____ A lot of sensitive people like birds. (5)

3. _____ He didn't understand himself why he stole the money. (4)

4. _____ He loved birds. (1)

5. _____ A lot of people have positive feelings towards birds. (7)

6. _____ The authorities have made a lot of mistakes in this case. (8)

7. _____ He really liked his mother. (2)

8. _____ One of the things he liked was birds. (3)

In the course of a discussion between two people on the question 'What should one do about Johnny' (where Johnny is a juvenile delinquent whose case history is being discussed), the following utterance was made:

"He seems to have em.... you know.... been absolutely craving attention all the time and...."

On the next page is a list of eight sentences, each of which might have continued the discussion after the utterance above. You are requested to rate them in terms of their comparative relevance to the discussion by assigning to each of them a number between 1 and 10 that will reflect your judgment: 1 is most/least relevant and 10 is most/least relevant. You are allowed to use each number more than once, but try to use as many of them as possible.

Read the utterance at the top of the page, then read the first possibility of continuing the discussion. Imagine that this is what the same/other speaker went on to say, try to think how relevant it would be, translate your judgment into a number between 1 and 10, and then write down the number in the space in front of the variant. Then read the top utterance again, this time imagine that it was followed by the second variant made by the same/other speaker, judge how relevant this way of continuing the discussion would be, and write a number according to your judgment in the space in front of the second variant. Proceed in the same way until you have rated all variants. You are allowed to change your mind about your judgment, but try to give your first reaction as much as possible. It does not matter whether you actually agree with what is said in the discussion.

PLEASE MAKE SURE YOU RATE ALL VARIANTS.

1. _____ He was nasty to other children. (4)

2. _____ He seemed to need attention constantly. (1)

3. _____ His brother was sick and craved attention all the time. (5)

4. _____ He should have been treated fairly and consistently. (6)

5. _____ He seems to have been craving for sweets and presents all the time. (2)

6. _____ Some delinquents are rehabilitated. (8)

7. _____ His sick brother kept expressing his need for attention. (7)

8. _____ His actions expressed his need for attention. (3)

In the course of a discussion between two people on the question 'What should one do about Johnny' (where Johnny is a juvenile delinquent whose case history is being discussed), the following utterance was made:

".... you know, he obviously has a great sense of sin and...."

On the next page is a list of eight sentences, each of which might have continued the discussion after the utterance above. You are requested to rate them in terms of their comparative relevance to the discussion by assigning to each of them a number between 1 and 10 that will reflect your judgment: 1 is most/least relevant and 10 is most/least relevant. You are allowed to use each number more than once, but try to use as many of them as possible.

Read the utterance at the top of the page, then read the first possibility of continuing the discussion. Imagine that this is what the same/other speaker went on to say, try to think how relevant it would be, translate your judgment into a number between 1 and 10, and then write down the number in the space in front of the variant. Then read the top utterance again, this time imagine that it was followed by the second variant made by the same/other speaker, judge how relevant this way of continuing the discussion would be, and write a number according to your judgment in the space in front of the second variant. Proceed in the same way until you have rated all variants. You are allowed to change your mind about your judgment, but try to give your first reaction as much as possible. It does not matter whether you actually agree with what is said in the discussion.

PLEASE MAKE SURE YOU RATE ALL VARIANTS.

1. _____ He had been treated fairly by Mr O'Brien, the social worker. (4)

2. _____ He also had a very strong desire to overcome his problems. (2)

3. _____ He felt that he had committed a sin. (3)

4. _____ Some psychotics believe they've sinned while in fact they haven't. (7)

5. _____ Johnny had a new coat when he stayed with Mrs Baker. (6)

6. _____ He had a great sense of sin. (1)

7. _____ Mrs Hatfield bought stolen goods from him. (8)

8. _____ Some psychotics have a great sense of sin. (5)

Appendix 8

Analyses of questionnaire data

Table 1: Analysis as one experiment, themes and examples random.

Tables 2, 3 and 4: Separate analysis for each theme, the example factor is assumed to be random.

Table 2: CM theme.

Table 3: Universities theme.

Table 4: JR.

Table 1

Analysis of variance for dependent variable 1

Source	Error term	F	Sum of squares	Deg. of freedom	Mean squares
1 Mean	I	********	160267.6	1	160267.6
2 I(Theme)		F"=0.8889	69.00961	2	34.50481
3 N(Position)	IN	0.7504	16.40791	1	16.40791
4 K(Referent)	IK	17.5217	1593.625	1	1593.625
5 L(Dimension)	IL	5.0542	521.8794	1	521.8794
6 M(Value)	IM	6.5319	4110.750	1	4110.750
7 J(I)(Example)	OJ(IN)	3.3176**	271.9211	9	30.21346
8 IN		F"=1.1777	43.72923	2	21.86461
9 IK		F"=0.7542	181.9031	2	90.95154
10 NK	INK	0.5158	1.822510	1	1.822510
11 IL		F"=1.3866	206.5149	2	103.2574
12 NL	INL	4.8552	70.35449	1	70.35449
13 KL	IKL	0.1290	16.18677	1	16.18677
14 IM		F"=5.1686*	1258.660	2	629.3301
15 NM	INM	0.0	.0	1	.0
16 KM	IKM	4.0952	914.2656	1	914.2656
17 LM	ILM	27.9935*	600.6680	1	600.6680
18 O(IN)(Ss)	OJ(IN)	2.0692**	3052.832	162	18.84464
19 NJ(I)	OJ(IN)	0.8183	67.06813	9	7.452014
20 JK(I)	OJK(IN)	12.3237**	1024.365	9	113.8184
21 JL(I)	OJL(IN)	10.8807**	559.6689	9	62.18542
22 JM(I)	OJM(IN)	10.2724**	942.0789	9	104.6754
23 INK			7.066422	2	3.533211
24 INL			28.98096	2	14.49048
25 IKL			250.9255	2	125.4628
26 NKL	INKL	2.2128	8.125488	1	8.125488
27 INM			155.0559	2	77.52795
28 IKM			446.5032	2	223.2516
29 NKM	INKM	3.8915	130.3103	1	130.3103
30 ILM			42.91479	2	21.45740
31 NLM	INLM	0.7213	13.86426	1	13.86426
32 KLM	IKLM	6.0430	567.7078	1	567.7078
33 OJ(IN)			4426.004	486	9.107003

Table 1 continued

Source	Error term	F	Sum of squares	Deg. of freedom	Mean squares
34 OK(IN)	OJK(IN)	1.7963**	2687.535	162	16.58972
35 OL(IN)	OJL(IN)	1.0794	999.4229	162	6.169276
36 OM(IN)	OJM(IN)	1.5858**	2617.831	162	16.15944
37 NJK(I)	OJK(IN)	2.6660**	221.6052	9	24.62270
38 NJL(I)	OJL(IN)	1.8929*	97.36646	9	10.81849
39 JKL(I)	OJKL(IN)	8.5949**	455.5374	9	50.61525
40 NJM(I)	OJM(IN)	3.7978**	348.2988	9	38.69986
41 JKM(I)	OJKM(IN)	7.6789**	524.6973	9	58.29968
42 JLM(I)	OJLM(IN)	9.9506**	575.2522	9	63.91690
43 INKL			7.344238	2	3.672119
44 INKM			66.97241	2	33.48621
45 INLM			38.44482	2	19.22241
46 IKLM			187.8901	2	93.94507
47 NKLM	INKLM	6.3652	20.37451	1	20.37451
48 OJK(IN)			4488.555	486	9.235709
49 OJL(IN)			2777.590	486	5.715204
50 OKL(IN)	OJKL(IN)	1.3155**	1254.990	162	7.746855
51 OJM(IN)			4952.320	486	10.18996
52 OKM(IN)	OJKM(IN)	2.2360**	2750.138	162	16.97615
53 OLM(IN)	OJLM(IN)	1.1479	1194.446	162	7.373120
54 NJKL(I)	OJKL(IN)	1.9446*	103.0676	9	11.45196
55 NJKM(I)	OJKM(IN)	2.3215*	158.6301	9	17.62556
56 NJLM(I)	OJLM(IN)	1.0607	61.32202	9	6.813558
57 JKLM(I)	OJKLM(IN)	17.7321**	894.5554	9	99.39503
58 INKLM			6.401855	2	3.200928
59 OJKL(IN)			2862.036	486	5.888962
60 OJKM(IN)			3689.787	486	7.592154
61 OJLM(IN)			3121.771	486	6.423398
62 OKLM(IN)	OJKLM(IN)	1.0547	957.7180	162	5.911839
63 NJKLM(I)	OJKLM(IN)	2.0340*	102.6099	9	11.40110
64 OJKLM(IN)			2724.209	486	5.605369

* $p < .05$

** $p < .01$

Table 2

Analysis of variance for dependent variable 1

Source	Error term	F	Sum of squares	Deg. of freedom	Mean squares
1 Mean			54792.56	1	54792.56
2 I(Position)		F"=0.0512	.8487723	1	.8487723
3 J(Example)	NJ(I)	1.4357	42.31863	3	14.10621
4 K(Referent)		1.38	246.7773	1	246.7773
5 L(Dimension)		1.456	71.92020	1	71.92020
6 M(Value)		5.86	678.9111	1	678.9111
7 N(I)(Ss)	NJ(I)	1.9856**	1053.484	54	19.50896
8 IJ	NJ(I)	0.1070	3.153442	3	1.051147
9 IK		F"=0.1825	1.567505	1	1.567505
10 JK	NJK(I)	14.2566**	483.7778	3	161.2593
11 IL		F"=0.9388	21.65680	1	21.65680
12 JL	NJL(I)	4.6808**	133.9124	3	44.63745
13 KL		F"=6.0331*	229.2861	1	229.2861
14 IM		F"=0.3292	23.91113	1	23.91113
15 JM	NJM(I)	7.3358**	280.9919	3	93.66397
16 KM		F"=14.6514**	1204.219	1	1204.219
17 LM		F"=4.9361	216.5896	1	216.5896
18 NJ(I)			1591.668	162	9.825113
19 NK(I)	NJK(I)	2.2680**	1385.299	54	25.65367
20 NL(I)	NJL(I)	1.1842	609.8181	54	11.29293
21 NM(I)	NJM(I)	1.9074	1315.070	54	24.35315
22 IJK	NJK(I)	3.9787**	135.0129	3	45.00430
23 IJL	NJL(I)	2.2997	65.79150	3	21.93050
24 IKL		F"=0.2682	.7637329	1	.7637329
25 JKL	NJKL(I)	2.9882*	76.85721	3	25.61906
26 IJM	NJM(I)	6.8171**	261.1233	3	87.04109
27 IKM		F"=2.5289	143.4424	1	143.4424
28 JKM	NJKM(I)	5.4625**	158.9226	3	52.97420
29 ILM		F"=2.4785	41.58960	1	41.58960
30 JLM	NJLM(I)	4.0496**	109.1680	3	36.38931
31 KLM			487.8484	1	487.8484
32 NJK(I)			1832.414	162	11.31120
33 NJL(I)			1544.863	162	9.536188

Table 2 continued

Source	Error term	F	Sum of squares	Deg. of freedom	Mean squares
34 NKL(I)	NJKL(I)	1.6104	745.5754	54	13.80695
35 NJM(I)			2068.415	162	12.76799
36 NKM(I)	NJKM(I)	3.0810**	1613.450	54	29.87869
37 NLM(I)	NJLM(I)	1.0360	502.6880	54	9.309036
38 IJKL	NJKL(I)	2.4499	63.01163	3	21.00388
39 IJKM	NJKM(I)	3.1631*	92.02563	3	30.67520
40 IJLM	NJLM(I)	1.1689	31.50977	3	10.50325
41 IKLM			17.48022	1	17.48022
42 JKLM	NJKLM(I)	4.5268**	99.88232	3	33.29410
43 NJKL(I)			1388.890	162	8.573394
44 NJKM(I)			1571.050	162	9.697841
45 NJLM(I)			1455.700	162	8.985804
46 NKLM(I)	NJKLM(I)	1.4219	564.7383	54	10.45812
47 IJKLM	NJKLM(I)	1.8248	40.26392	3	13.42130
48 NJKLM(I)			1191.486	162	7.354849

* $p<.05$

** $p<.01$

Table 3

Analysis of variance for dependent variable 1

Source	Error term	F	Sum of squares	Deg. of freedom	Mean squares
1 Mean			50341.52	1	50341.52
2 I(Position)		F"=0.0813	2.145089	1	2.145089
3 J(Example)	NJ(I)	6.0440**	171.4397	3	57.14658
4 K(Referent)		F"=9.7069*	1144.321	1	1144.321
5 L(Dimension)		F"=5.3	617.5803	1	617.5803
6 M(Value)		F"=10.1113*	371.5713	1	371.5713
7 N(I)(Ss)	NJ(I)	2.7894**	1424.204	54	26.37415
8 IJ	NJ(I)	0.5506	15.61830	3	5.206100
9 IK		F"=0.3799	6.035645	1	6.035645
10 JK	NJK(I)	9.7594**	305.0400	3	101.6800
11 IL		0.4604	1.285400	1	1.285400
12 JL	NJL(I)	28.8603**	340.4685	3	113.4895
13 KL		F"=0.688	6.752197	1	6.752197
14 IM		F"=1.8825	27.00879	1	27.00879
15 JM	NJM(I)	3.2608*	84.98633	3	28.32877
16 KM		F"=4.4256	69.93091	1	69.93091
17 LM		F"=12.0116**	341.2522	1	341.2522
18 NJ(I)			1531.736	162	9.455162
19 NK(I)	NJK(I)	1.6586**	933.1311	54	17.28020
20 NL(I)	NJL(I)	0.9583	203.4988	54	3.768496
21 NM(I)	NJM(I)	1.0680	501.0334	54	9.278397
22 IJK	NJK(I)	2.4979	78.07446	3	26.02481
23 IJL	NJL(I)	1.9234	22.69092	3	7.563639
24 IKL		F"=0.2968	.5615234E-01	1	.5615234E-01
25 JKL	NJKL(I)	3.7348*	48.10791	3	16.03596
26 IJM	NJM(I)	1.1145	29.04796	3	9.682652
27 IKM		F"=2.308	53.62744	1	53.62744
28 JKM	NJKM(I)	0.8402	20.15259	3	6.717529
29 ILM		F"=0.6859	5.359863	1	5.359863
30 JLM	NJLM(I)	4.4335**	66.87598	3	22.29199
31 KLM			9.723389	1	9.723389
32 NJK(I)			1687.828	162	10.41869
33 NJL(I)			637.0444	162	3.932373

Table 3 continued

Source	Error term	F	Sum of squares	Deg.of freedom	Mean squares
34 NKL(I)	NJKL(I)	1.2762	295.9084	54	5.479786
35 NJM(I)			1407.411	162	8.687724
36 NKM(I)	NJKM(I)	1.2575	542.9094	54	10.05388
37 NLM(I)	NJLM(I)	1.3001	352.9839	54	6.536738
38 IJKL	NJKL(I)	2.1374	27.53198	3	9.177327
39 IJKM	NJKM(I)	2.0819	49.93373	3	16.64458
40 IJLM	NJLM(I)	1.7116	25.81825	3	8.606084
41 IKLM			.4357910	1	.4357910
42 JKLM	NJKLM(I)	21.1661**	262.9409	3	87.64697
43 NJKL(I)			695.5735	162	4.293663
44 NJKM(I)			1295.172	162	7.994886
45 NJLM(I)			814.5454	162	5.028058
46 NKLM(I)	NJKLM(I)	0.6195	138.5154	54	2.565099
47 IJKLM	NJKLM(I)	2.6601	33.04614	3	11.01538
48 NJKLM(I)			670.8274	162	4.140909

* p<.05

** p<.01

Table 4

Analysis of variance for dependent variable 1

Source	Error term	F	Sum of squares	Deg. of freedom	Mean squares
1 Mean			55202.52	1	55202.52
2 I(Position)		F"=5.3639*	57.14285	1	57.14285
3 J(Example)	NJ(I)	2.4113	58.16293	3	19.38763
4 K(Referent)		F"=4.5739	384.4307	1	384.4307
5 L(Dimension)		F"=1.3353	38.89285	1	38.89285
6 M(Value)		F"=20.9197*	4318.030	1	4318.930
7 N(I)(Ss)	NJ(I)	1.3250	575.2698	54	10.65314
8 IJ	NJ(I)	2.0024	48.29912	3	16.09970
9 IK		F"=0.76	1.285645	1	1.285645
10 JK	NJK(I)	13.1064**	235.5469	3	78.51563
11 IL		F"=14.81**	76.39510	1	76.39510
12 JL	NJL(I)	7.7325**	85.29019	3	28.43005
13 KL		F"=0.314	31.08029	1	31.08029
14 IM		F"=3.3092	104.1367	1	104.1367
15 JM	NJM(I)	21.0352**	576.1094	3	192.0365
16 KM		F"=0.7266	86.62109	1	86.62109
17 LM		F"=0.6529	85.74609	1	85.74609
18 NJ(I)			1302.534	162	8.040336
19 NK(I)	NJK(I)	1.1421	369.4604	54	6.841860
20 NL(I)	NJL(I)	0.9382	186.2670	54	3.449389
21 NM(I)	NJM(I)	1.6269*	802.0310	54	14.85243
22 IJK	NJK(I)	0.4742	8.521439	3	2.840479
23 IJL	NJL(I)	0.8056	8.885681	3	2.961893
24 IKL		F"=2.3858	14.64494	1	14.64494
25 JKL	NJKL(I)	23.0345**	330.5745	3	110.1915
26 IJM	NJM(I)	2.1222	58.12256	3	19.37418
27 IKM		F"=0.3226	.2299805	1	.2299805
28 JKM	NJKM(I)	22.5425**	345.6523	3	115.2174
29 ILM		F"=2.612*	5.362717	1	5.362717
30 JLM	NJLM(I)	25.3905**	399.1980	3	133.0660
31 KLM			258.0369	1	258.0369
32 NJK(I)			970.4790	162	5.990611
33 NJL(I)			595.6265	162	3.676706

Table 4 continued

Source	Error term	F	Sum of squares	Deg. of freedom	Mean squares
34 NKL(I)	NJKL(I)	0.8287	214.0629	54	3.964128
35 NJM(I)			1478.941	162	9.129265
36 NKM(I)	NJKM(I)	2.1553**	594.8716	54	11.01614
37 NLM(I)	NJLM(I)	1.1987	339.2366	54	6.282158
38 IJKL	NJKL(I)	0.8736	12.53760	3	4.179199
39 IJKM	NJKM(I)	1.0839	16.61914	3	5.539713
40 IJLM	NJLM(I)	0.2540	3.992920	3	1.330973
41 IKLM			8.854736	1	8.854736
42 JKLM	NJKLM(I)	33.5891**	531.6833	3	177.2278
43 NJKL(I)			774.9678	162	4.783751
44 NJKM(I)			827.9995	162	5.111108
45 NJLM(I)			849.0054	162	5.240773
46 NKLM(I)	NJKLM(I)	0.8995	256.2771	54	4.745872
47 IJKLM	NJKLM(I)	1.8539	29.34546	3	9.781819
48 NJKLM(I)			854.7683	162	5.276347

* $p<.05$

** $p<.01$